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Editorial

A Note of Thanks

At the beginning of each March issue of *AJER* the contribution of the past year's reviewers is acknowledged. One of the highlights that I have experienced since taking over as the editor of this journal is the positive and professional attitude of the individuals whom I have asked to review manuscripts. With very few exceptions they appear honored to be asked. As we all know there is very little tangible reward for reviewing what are sometimes very difficult manuscripts. It is just one more of the many things that we are asked to do each day in addition to our normal work load. However, it is my experience that most reviewers approach the task in a very constructive manner. They appear to see the process as a distinct way that they can help towards nurturing and directing research in education. Criticism is rarely anything but constructive and in most cases reviewers will go to considerable length to offer specific advice for improvement. It is on the basis of this very positive experience that I would like to thank all those who have reviewed for the journal in 1991.

I would also like to take this opportunity to acknowledge the contribution of several retiring members of *AJER*'s Consulting Editorial Board. Janet Donald, Lilian Katz, John McLeod, Luran Sandals, and Keith Sullivan have served on the Board for three and, in some cases, four years. Their contribution in offering guidance and support to the editor, in finding appropriate and reliable reviewers, and in reviewing articles themselves has been greatly appreciated by the journal. In addition I would like to welcome four new Board members: James Chapman of Massey University, New Zealand, Linda Larocque of the University of Alberta, Stewart McCann of University College of Cape Breton, and Sharon Robertson of the University of Calgary.

Beginning with this issue *AJER* will provide both an English and a French version of the abstract of each article that it publishes. This in my mind is an addition that is long overdue. It is perhaps fitting that the journal is adopting this policy as the December 1992 issue will be devoted to educational research in Quebec. Colette Dufresne-Tassé and Jacques Desautels of the Université de Montréal are serving as guest editors for that issue.

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Peter Evans
Lloy Falconer
Jocelyn Groves
Daniel Rubin

and

David Mather
University of Victoria

An Evaluation of the IBM Principle of Alphabet Literacy System (PALS)

PALS (principle of Alphabet Literacy System) is an IBM computer-based reading instruction program designed to develop reading and writing skills in the below-grade-6 level. It became available from IBM in 1987 and in the same year was evaluated in the Saanich School District of British Columbia. Adults with a wide diversity of educational and cultural backgrounds attended the program for a period of 100 hours spread over a 20-week period. Results showed significant reading gains for adults with beginning reading levels ranging from grade 2 to 7. Participant feedback emphasized the importance of skilled and empathic support from instructional staff.

Le PALS (Principle of Alphabet Literacy System) est un didacticiel IBM de lecture conçu pour développer les habiletés de lecture et d'écriture des personnes de niveaux inférieurs à la sixième année. IBM le mit à la disposition du public en 1987; la même année, il fut évalué dans le District Scolaire de Saanich en Colombie Britannique. Des adultes de niveaux d'éducation très divers et issus de milieux culturels disparates participèrent au programme pour une durée de 100 heures s'étalant sur une période de 20 semaines. Les résultats ont révélé des gains significatifs en lecture pour des adultes à des niveaux initiaux de lecture allant de la 2^{ème} à la 7^{ème} année. Le feedback donné par les participants a mis l'accent sur l'importance de l'assistance experte et soutenue du personnel enseignant.

Introduction

Illiteracy is a pervasive problem in Canada. A recent survey by Southam News (Nesbitt, 1987) revealed that 24% of Canadian residents 18 years and older are illiterate. The study also found that approximately 30% of Canadian children

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Lloy Falconer received her PhD and is currently working for School District No. 63 (Saanich) in British Columbia.

Jocelyn Garwood (formerly Groves) received her MA in 1990. She is currently working in the Educational Technology Centre.

Dan Rubin received his MA and is currently teaching in the school district.

David Mather is currently studying for his PhD.

do not complete high school, and even among those who do 7% lack sufficient reading and writing skills to function successfully in society.

Illiteracy limits an individual's job opportunities (Nickerson, 1985), reduces self-esteem (Bowren, 1987), and results in an overall reduction of productivity in society. The Southam Literacy survey (Nesbitt, 1987) estimated its economic cost to Canada at two billion dollars per year. For reasons such as these there has recently been a concentration of research on developing effective adult literacy programs (Balmuth, 1988; Bowren, 1987; Heathington, 1987; Nickerson, 1985; Padak & Padak, 1987; Roscow, 1988; Schlossberg, 1987; Schuman, 1989) including a focus on computer-assisted instruction (CAI) (Imel, 1988; Snyder & Herrlinger, 1986; Turner, 1988a, 1988b; Young & Irwin, 1988). This article reports on an evaluation of one such program implemented in 1988 under government funding in the Saanich School District near Victoria, British Columbia.

The program was designed by IBM and marketed in 1987 under the trade name of PALS (Principle of Alphabet Literacy System, IBM Canada Ltd., 1987). It is one of three major systems for purchase in adult literacy programs where the computer serves as the primary medium of instruction, with teachers acting as facilitators for the learning process (Turner, 1988a). The other two are Programmed Logic for Automatic Teaching Operations (PLATO) and Computer Curriculum Corporation (CCC). They differ in that PALS aims at grade levels 0 to 5, whereas both PLATO and CCC are designed for literacy levels of grade 4 or higher. At the time of this evaluation (1988), the PALS installation in Saanich was the first of its kind in Canada.

The researchers were commissioned by the funding agency to provide an evaluation of the effectiveness of the program on a group of adult volunteers characterized by wide variations in demographic variables. The diversity of needs in this population, as well as the absence of empirical evidence supporting the instructional efficacy of CAI with adult learners (Bean, Given, & Johnson, 1988) prompted the use of both qualitative and quantitative methods of assessment (Cronbach, 1975; Guba, 1987).

Method

Subjects

Because of the newness of the PALS program (IBM Ltd., 1987), no empirical data were available on its suitability for adult illiterates. The 1988 Saanich, BC installation was the first of its kind in Canada. Therefore, a wide range of adult subjects was sought from the general public and a variety of community agencies. Ages ranged from mid-teens to mid-60s and included a broad ethnic mix. Educational achievement ranged from completion of elementary school to, in the case of one immigrant, completion of university. The ratio of males to females was approximately 2:1. A total of 27 subjects completed the program.

Materials

The computer laboratory was furnished with four IBM InfoWindow touch screens and eight IBM personal computers. Hardware and software costs were approximately \$120,000. Although the equipment could have been installed in a regular classroom, other considerations necessitated building a trailer-type laboratory at an additional cost of approximately \$50,000. The new building

provided physical surroundings that were efficient and orderly, but also colorful and relaxed. The work stations were laid out in a manner that facilitated staff handling of individual problems without interfering with ongoing work at other stations. The facility was designed to handle 16 students at one time.

PALS (Principle of Alphabet Literacy System) is designed to develop reading and writing skills in a multimedia format. It attempts to connect speech with written communication using as a vehicle for learning a fable describing the invention of the alphabet. The fable is presented in comic-style format with audio accompaniment to the printed text. As an aid in translating speech sounds to print, visual demonstrations of the articulation of basic phonemes can be called up as required. The emphasis is on hearing the sounds in words, using alphabet symbols to represent the sounds, putting these symbols together to form words, and finally writing sentences. There is no insistence on correct spelling at the outset. Students are encouraged to spell words the way they hear them, as the computer is programmed to accept "sound-spelling." The focus is on word comprehension, word formation, and word usage in sentence building. The system is supplemented by computerized touch-typing and word processing programs.

Procedure and Design

Out of an original enrolment of 48, 27 subjects completed the course. Some students were unable to attend from the beginning while others dropped out as a result of conflicting work and family commitments. The remaining participants attended in groups of 7, 9, and 11 members during three separate one and a quarter-hour sessions. These took place in the afternoon and evenings on four days of each week over a period of 20 weeks.

The Woodcock Reading Mastery Test (Woodcock, 1973, Forms A and B) was administered at the beginning and end of the sessions to evaluate changes in reading skills. The Word Attack subtest of this battery served as a measure of sound-based word decoding skill. In addition, individual interviews were carried out to determine qualitative reactions to both content and administration of the PALS program.

The evaluation procedure emphasized both process and product evaluation, that is, the evaluators observed and interacted with the staff during the training period and also measured literacy outcomes on completion of the program. The procedure was comparable to the judgmental side of Stake's (1967) Countenance evaluative model. This model directs attention to antecedent conditions, transactions (e.g., training), and outcomes, breaking them down into planned and actual outcomes on which judgments can be made in relation to acceptable standards of performance.

The evaluators did not participate in the planning stage of the project as its one-of-a-kind nature, driven by the availability of new technology, led the agency to initiate evaluation after the installation was in place. Thus the emphasis was on determining whether the training setting (i.e., laboratory, equipment, and staff) was successful in stimulating effort in a diverse population. Without this knowledge, it would not have been possible to know whether the reading outcome measures were confounded by factors unrelated to the program design such as insufficient equipment or staff.

Two teachers certificated in traditional educational instruction served as facilitators. They had worked through the software themselves before using it with students. Both teachers were positive about the use of computer-assisted instruction as an educational medium. They were also aware of the need to provide a considerable amount of personal assistance during the initial stages of the program in order to develop confidence in students with little previous experience in using computers.

Results and Discussion

As the PALS program is aimed at a specific grade level range (0 to 5), assessment of treatment effects were compared against beginning Woodcock Mastery Reading Test (WMRT) levels. On this basis, of the 27 subjects who completed all sessions, six began at grades levels 1 to 2; 10 at grade levels 3 to 5 and 11 at grade levels 5 to 7. Table 1 indicates the grade improvement for each of the three groups. Paired t-test comparisons showed the progress for each group to be statistically significant.

Group I showed the smallest increase in grade level as well as the least variation in individual improvement. In contrast, both groups II and III showed considerably higher grade increases (three and four times the Group I increase respectively) and also much wider individual variations. Thus, at least on the basis of the WMRT results, the PALS program benefits are not restricted to beginning grade levels of 5 or below.

Qualitative and quantitative analysis of individual data revealed several reasons for variations in individual progress. These included absenteeism due to other commitments, differences in personal motivation, and differences in response to the phonological emphasis of the PALS program. The latter effect is indicated by Figure 1, which illustrates that in general the large reading gains were made by those subjects who were strong in sound-based word attack strategies. Three exceptions to this trend evidenced histories of specific reading difficulties. These subjects achieved ceiling levels in word-attack skills, but progressed less than three grades on the WMRT overall reading evaluation.

The participants of the program were generally unanimous in their liking for the nonstressful, self-paced learning environment provided by computer-assisted instruction, and equally impressed by the empathic one-on-one assistance provided by the instructors. The pupil-instructor ratio of 5:1 was influential in overcoming previous negative experiences, and was clearly a

Table 1
Woodcock Reading Mastery Test:
Mean Grade Level Improvements Versus Beginning Reading Level

Group	Starting grade level	N	Mean grade level improvement	SD	t value	df	P(2-tail)
I	1 - 2	6	.917	.412	5.46	5	.003
II	3 - 5	10	3.010	2.555	3.73	9	.005
III	5 - 7	11	4.236	1.803	7.79	10	.000

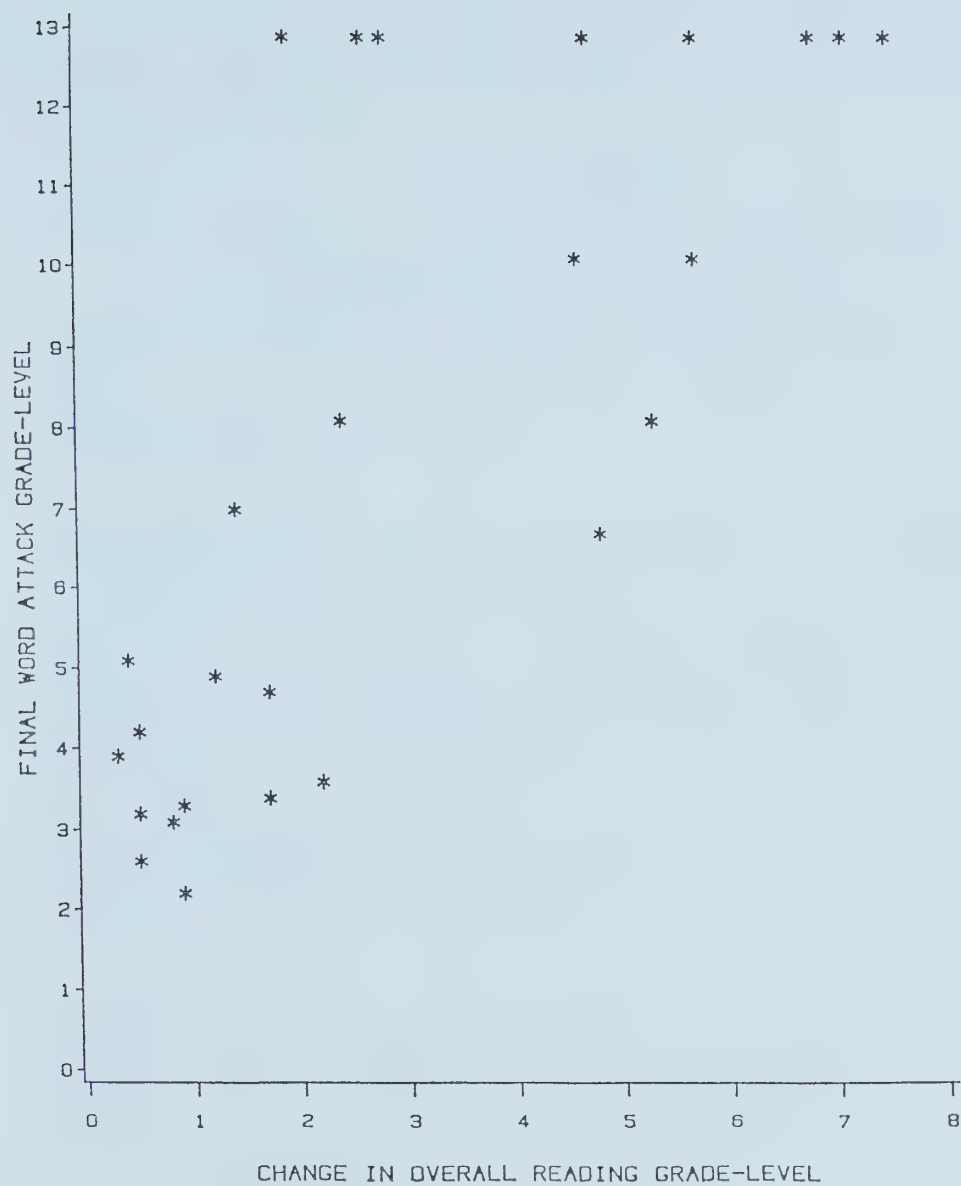


Figure 1. Woodcock Reading Master Test: Reading improvement versus final word-attack grade-level.

source of program success. Experience indicated that 12 rather than 16 students was an optimum class size for this facility.

Summary and Recommendations

The IBM Principle of Alphabetic Literacy System (PALS) produced significant reading gains in subjects varying widely in age, educational level, and cultural background. The Woodcock Reading Mastery Test (WRMT, Woodcock, 1973) scores calculated before and after an average of 100 hours instruction spread over 20 weeks found reading gains ranging from 0.4 to 7.5 grade levels. A comparison of individual progress with respect to beginning reading levels indicated that the most impressive gains were made by subjects possessing a minimum of a grade 2 reading ability as measured by the WRMT. It was generally indicated that subjects with the poorest sound-based word-analysis skills, as measured by the Word Attack subtest of the WRMT, made the least overall reading gains. Individual subject interviews suggested that the impor-

tance of readily available empathic assistance by well-trained instructors may be essential to a successful PALS implementation.

It is recommended that further evaluations of PALS should attempt to assess additional needs of participants who have deficient phonological skills.

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Hope-Arlene Fennell

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An Investigation of the Relationships Between Organizational-Cultural Linkages and Teachers' Stages of Concern Toward a Policy Implementation

Educators and school organizations are faced with constant changes in educational policies related to curriculum and instruction. Implementing new policies presents many challenges to both educational administrators and teachers. Presented in this article are the findings from a recent study that investigated the existence of relationships between teachers' perceptions of the organizational-cultural linkages in the schools in which they taught and their stages of concern toward the implementation of a policy mandate. Other purposes included examining policy implementation strategies and investigating the patterns of organizational-cultural linkages that existed in the schools used as sites for the study. Key findings from this holistic study included the relationship of time factors to the concepts of top-down and bottom-up implementation strategies, differences in patterns of organizational-cultural linkages among the six schools, and the identification of relationships between categories of organizational-cultural linkages and teachers' responses and concerns to the implementation of a curriculum policy mandate, the Common Essential Learnings.

Les éducateurs et les organisations scolaires font face à des changements constants dans les politiques d'éducation concernant les programmes et l'instruction. La mise en pratique de nouvelles politiques présente plusieurs défis aussi bien aux administrateurs scolaires qu'aux enseignants. Dans cet article, on présente les résultats d'une étude récente dans laquelle on a examiné l'existence de relations entre les perceptions des enseignants concernant les liens organisationnels-culturels dans les écoles où ils enseignent et leurs niveaux d'intérêt pour la mise en pratique d'une politique mandatée. D'autres buts de l'étude étaient d'examiner les stratégies de mise en pratique des politiques et les patterns de liens organisationnels-culturels qui existaient dans les écoles qui ont servi à l'étude. Les résultats principaux de cette étude holistique comprenaient la relation entre les facteurs de temps et les concepts de stratégies de mise en pratique "de haut en bas" (top-down) et "de bas en haut" (bottom-up), les différences entre les patterns de liens organisationnels-culturels des six écoles, et l'identification de relations entre les catégories de liens organisationnels-culturels et les réactions et intérêts concernant la mise en pratique d'une politique mandatée de programme, les Apprentissages Communs Essentiels (Common Essential Learnings).

While the challenges facing educational organizations and the pressures weighing upon teachers increase in both number and complexity, results of research into change processes in education are fragmented and far from conclusive. Global issues such as our environment, economic reordering, and peace initiatives all have a sense of urgency about them. National leaders see

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schools as being crucial to the development of the human resources necessary to effectively contend with these and other issues. Most provinces are launching major initiatives in relation to schools despite their concerns with economic hardship and the increased public demands for accountability.

As leaders in education prepare to respond to environmental changes, they look to research for guidelines only to find that while much has been learned during the last decade the results appear to be fragmented. Some writers such as Corbett and Rossman (1989) highlight the importance of viewing changes as processes that are affected over time by the interaction of technical, political, and cultural factors. Others, such as Timar and Kirp (1987), have discussed dilemmas related to top-down and bottom-up implementation strategies. Top-down implementation strategies (Cuban, 1984; Seashore Louis & Dentler, 1988) refer to those strategies drafted at the top of school organizations to which organizational members must strictly adhere throughout implementation processes. Such strategies would include adherence to predetermined time lines and activities during implementation processes. Opposite top-down strategies are bottom-up strategies that are based solely on the discretion and actions of the individuals involved in implementation processes. Peters and Waterman (1982) contend that in order for change processes to be effective organizations have to be simultaneously loosely and tightly coupled. Simultaneous loose-tight coupling implies the coexistence of firm central direction with maximum individual autonomy for front line implementers of policies or innovations. For a number of years, Hall (1979) and his associates have advocated teachers' stages of concern as the basis for successful implementation. Research seems to suggest that if schools are to respond effectively to changes in their environment, implementation strategies must be based on societal and organizational factors as well as teachers' stages of concern.

The primary purpose of the study reported in this article was to investigate relationships between teachers' perceptions of the organizational-cultural linkages in the schools where they taught and their stages of concern about implementing provincially mandated instructional changes into their classroom teaching strategies. Other purposes were to describe the school division implementation strategy and to determine how it affected the implementation processes in each of the six schools examined in the research and to describe the patterns of organizational-cultural linkages noted in each of the six schools. The results of the study contribute to the literature by describing the variations in the patterns of linkages observed in six schools within one school system, by relating organizational linkages to teachers' concerns about implementation and by identifying timing as a key factor in understanding the relationships among the concepts of top-down, bottom-up, and simultaneous loose-tight coupling. In the next section, a particularly interesting innovation entitled the Common Essential Learnings is described. The Common Essential Learnings were the focus of the implementation processes for the research described in this article. Following the discussion of the innovation, the conceptual framework is presented and research methods are outlined. Findings are then summarized and discussed.

The Innovation: The Common Essential Learnings

Since the early 1980s, extensive planning for changes in curricula and instruction has been under way in Saskatchewan. The planning has resulted in the development of a policy statement centered around the Core Curriculum concept and has identified Required Areas of Study and a set of Common Essential Learnings (Saskatchewan Education, 1987; 1988a; 1988b). Consisting of six complex sets of skills, abilities, attitudes and knowledge, the Common Essential Learnings are to be developed throughout all areas of the curriculum. Communication, Numeracy, Creative and Critical Thinking, Technological Literacy, Personal and Social Values and Skills, and Independent Learning are the six areas that comprise the Common Essential Learnings.

The area of Communication focuses on the development and improvement of students' language skills throughout the curriculum and involves skills in the areas of reading, writing, listening, and speaking. Numeracy is concerned with the development of knowledge, skills, and appreciations of mathematical ideas, techniques, and application. The main rationale for numeracy is based on the increased need for individuals to interpret quantitative information as the use of technology increases in our society. Creative and critical thinking is intended to enhance the development of students' abilities to create and evaluate ideas, processes, experiences, and objects. Technological literacy involves developing an understanding of the ways in which society is shaped by technology, understanding the conflicting assumptions and values surrounding technology, and having the necessary skills to make responsible decisions about the social issues related to technology. Personal and social values and skills are thought to contribute to the development of responsible, compassionate individuals and are based on the moral value of respect for all persons. Independent learning focuses on the creation of opportunities and experiences that are necessary to assist students in becoming capable, self-reliant, self-motivated, and life-long learners.

The main features of the Common Essential Learnings are presented in four ideas. First, the Common Essential Learnings are not separate subjects and will not be taught as individual courses; instead they are incorporated in the curriculum. Second, students will not be evaluated on their acquisition of the Common Essential Learnings independently of the curriculum. Third, many of the same skills, processes, attitudes and values are the same for each of the Common Essential Learnings. Last, because of the Common Essential Learnings, teachers have been encouraged to develop a broader understanding of the teaching-learning process and to use a variety of instructional strategies.

In summary, the Common Essential Learnings are six sets of processes and skills designed to form the basic underpinnings that will shape curriculum and instruction in Saskatchewan as the transition is made to the Core Curriculum policy (Saskatchewan Education, 1987). Implementation of the Common Essential Learnings will require teachers to use a variety of instructional strategies and to make some modifications in their planning for instruction. In the next section, the discussion focuses on the questions and conceptual framework that guided this research on the implementation of the Common Essential Learnings.

The Conceptual Framework

The study of any educational change process involves three main sets of concepts: those describing to the implementation processes, those describing the organizational context of the implementation process, and those describing the actors involved in the implementation of the innovation or the policy (Fullan, 1982; Seashore Louis & Dentler, 1988). The concepts that were linked to form the framework (Figure 1) for this study included policy implementation strategies, organizational-cultural linkages, and teachers' stages of concern about an innovation. Each of the three concepts appears as a separate continuum on the framework. The underlying concept relating to each continuum involves thinking about the implementation of innovations from the technical, political, and cultural perspectives. Each of the concepts from the conceptual framework is briefly discussed below along with an overview of the interrelationships among them. Discussion begins with the three perspectives on innovation because this is the unifying concept underlying the conceptual framework.

Three Perspectives on the Implementation of an Innovation

House (1979; 1981), Tichy (1980) and Corbett and Rossman (1989) contend that the technical, political, and cultural perspectives of organizations need to be considered as part of the process of implementing an innovation. House (1981) indicates that while the technical perspective is still the most widely used approach to innovation, a shift in perspectives "from the innovation, to the innovation in context, to the context itself" (p. 28) has occurred. House also

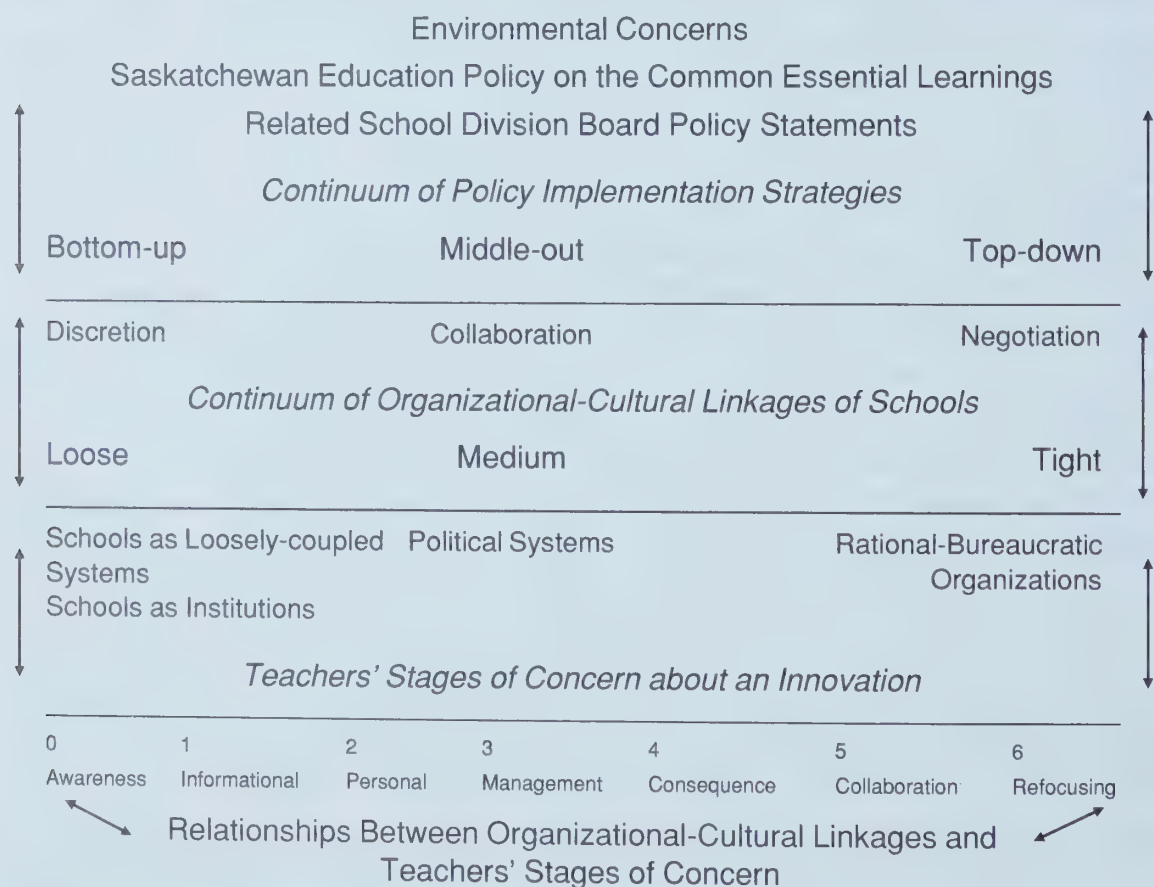


Figure 1. A framework relating policy implementation strategy, organizational-cultural linkages, and teachers' stages of concern about an innovation.

indicates that although each of the perspectives provides some important ideas for understanding the implementation process, the three perspectives in combination provide a more complete picture than any one alone. Tichy asserts that the best way to manage change within organizations is to assess the technological, political, and cultural cycles in organizations to determine how each will affect and be affected by innovations or change processes. Corbett and Rossman think that the three perspectives are present and active in all implementation processes. They note that problems with innovations that appear to be technical are also likely to have political and cultural ramifications. Corbett and Rossman (1989) conclude that, "At the school level, all three sets of processes can and did occur simultaneously" (p. 166). Each of the three perspectives is part of the policy implementation strategies, the organizational-cultural linkages, and the stages of concern expressed by teachers.

Policy Implementation Strategies

Strategies used in the implementation of educational policies have varied greatly. Wise (1983), Common (1983), Cuban (1984), Purkey and Smith (1985), and Timar and Kirp (1987) have discussed issues and dilemmas related to top-down and bottom-up implementation strategies. Barrett and Fudge (1981a) have discussed the importance of discretion and negotiation as part of the policy implementation strategy. Common (1983) and Seashore Louis and Dentler (1988) have discussed the importance of collaboration between policy implementers and the teacher-actors who will be expected to carry out the tasks introduced through the policy. Policy implementation strategies are likely to influence and to be influenced by the organizational context and the concerns felt by the actor-implementers.

Organizational-Cultural Linkages

The concept of the organizational contexts of schools and school organizations was defined and discussed using the term organizational-cultural linkages. Because of the varied definitions of the concept of coupling, Wilson and Corbett (1983) suggested the term *linkages* to describe the bonding components within organizations. Linkages were defined for this research as those mechanisms in schools that served to coordinate the activities of the people who worked there. Eight categories of linkages were identified (Wilson, Firestone, & Herriott, 1985), which included goal consensus among teachers, the facilitative leadership of the principal, communication among teachers and between teachers and the principal, the amount of conflict in the school, the level and order of student discipline in the school, and the degree to which the principal's influence on classroom instruction and on curriculum and resources was evident. Relating the eight categories of linkages to the concept of three perspectives on implementation, they were categorized as structural (technical), interpersonal (political), and cultural (cultural). Structural linkages included facilitative leadership and the principal's influence on classroom instruction and curriculum and resources. Interpersonal linkages included the amount of communication among teachers, between the principal and teachers, and the amount of conflict in the school. Goal consensus among teachers

and the level of student discipline in the school were categorized as cultural linkages.

The organizational-cultural linkages appear on the second continuum on the conceptual framework as part of three images of school organizations (Herriott & Firestone, 1984). Each image is described in terms of the looseness or tightness of the linkages that act as bonds to keep the organizational components together. The image of the rational-bureaucracy that clearly defined roles, rules, and delineated lines of authority was used to represent the most tightly linked organization. The images of loose coupling and institutions (Meyer & Rowan, 1983) were used to represent school organizations that were loosely linked, the opposite of rational bureaucracies. The image of school organizations as political systems was found between the loosely coupled and rational bureaucratic images. The political system image, which has characteristics of the other two images, focuses on the aggregation and dispersal of power throughout the school. Therefore, the political image represents school organizations that exist as negotiated orders that are constantly shifting to pressures from within and without the organization (Patterson, Purkey, & Parker, 1987). Organizational culture is also suggested as a linkage mechanism in organizations. Peters and Waterman (1982) strongly contend that cultural bonds can act as powerful linkage mechanisms coordinating the work and activities of individuals in the organization.

In summary, organizational-cultural linkages have been identified as mechanisms that serve to coordinate the activities of individuals in organizations and the bonds that link organizational components. Different patterns of linkages are displayed on a continuum as three images of school organizations. In the next section of the discussion, the concerns of teachers, who create a strong facet of the organizational context, are discussed.

Teachers' Stages of Concern about an Innovation

The third continuum on the conceptual framework represents teachers' stages of concern. Hall and Loucks (1978) contend that prior to and during any implementation process teachers go through a series of psychological stages that have been conceptualized as stages of concern toward the innovation. Hall (1979) indicates that the concerns that have been conceptualized in his work represent the motivations, perceptions, attitudes, and feelings that teachers experience in relation to implementing an innovation. The seven stages of concern have been categorized into three groups beginning with self-concerns, moving into concerns about managing the tasks of the innovation, and then becoming concerned with the impact of the innovation on the growth and development of their students. Hord, Rutherford, Huling-Austin, and Hall (1987) contend that teachers' concerns about innovations are developmental in nature and vary in intensity as the implementation process progresses.

Summary

The conceptual framework for the research was based on four concepts that appeared to be interrelated during the implementation process. The first was that, in implementation processes, the technical, political, and cultural aspects in all areas of the organization need to be addressed throughout the process. The second concept dealt with a continuum of implementation strategies,

ranging from top-down to bottom-up. This continuum was linked to the investigation of implementation strategies used for the implementation of the Common Essential Learnings in each of the schools. A third concept was related to the investigation of patterns of organizational-cultural linkages found in schools and was represented by a continuum of images of schools that ranged from the rational-bureaucratic, with tight linkages, to schools as loosely coupled systems or institutions, which are characterized by loose linkages. The last continuum on the framework represented teachers' stages of concern toward an innovation. The concerns are thought to be developmental in nature and to move from self concerns, through task concerns to concerns for the growth and development of students. The concerns continuum, in relation to the linkage continuum, addressed the main purpose of the research, which was to investigate the existence of relationships between teachers' stages of concern toward the implementation of the Common Essential Learnings and their perceptions of the organizational-cultural linkages in the schools where they taught. In the next section, selection of the research site, the methods and procedures used to collect and analyze the data attached to the framework are discussed.

Methods

In order to investigate implementation strategies, organizational linkages, and teachers' concerns, the study had to be designed holistically. To address the main research question regarding the existence of relationships between teachers' perceptions of the organizational-cultural linkages in their schools and their stages of concern toward the implementation of the Common Essential Learnings, the School Assessment Survey (Wilson et al., 1985) and the Stages of Concern Questionnaire (Hall & Loucks, 1978) were completed by each of the teachers. The contexts of the schools were studied to provide interpretative validity (Erickson, 1989) and to provide for the emergence of contextual factors that were affecting the implementation processes. Data for the study of the school contexts were collected through extensive observations, print materials, and interviews with principals, teachers, central office field staff, and central office administrators. The combination of both quantitative and qualitative data, as was used in this research, is supported by Wilson and Corbett (1983) and by Guba (1981). The emphasis on truth embedded in a social context is in keeping with critical research theory as described by Carr and Kemmis (1986). In the sections below, site selection, data collection, and data analysis procedures are described.

Selection of the Research Site

The site chosen for conducting the research was a large rural school division from which it was possible to choose six schools that had 10 or more teachers. Because the researcher was investigating the organizational-cultural linkages in schools, the schools from only one division were targeted to ensure that the goals of the central office administration were consistent. The researcher was also anxious that the six schools be selected from among elementary, kindergarten to grade 12, and secondary schools so that two of each were part of the sample. The sites were selected because it was believed that they were very

diverse in terms of the contexts of organization, principals' leadership styles, and the community contexts in which they were situated.

Data Collection

Four kinds of data were collected in answer to the questions of this study. Data were collected using two questionnaires, structured and unstructured interviews, field notes and observations, and printed materials related to the current and historical aspects of the implementation process. The data collection for the study took place in four phases over a four-month period. It is important to note, however, that the printed materials that were collected gave a historical view of the implementation that dated from two years prior to the beginning of this research process.

Phase one involved the selection of the research site and concluded with an initial visit to each of the selected schools, initial interviews with the Director of Education and the Associate Director, and the collection of historical documents related to the implementation. Phase two consisted of two visits, of at least one half day each, to each of the six schools. During phase two, data were collected through observations, field notes, questionnaires, interviews with principals and facilitating teachers, talking with parents, teachers, and students about the schools and communities, and through the collection of further printed materials about the implementation. Interviews with catalyst teachers were also conducted during phase two. Phase three involved the initial analysis and charting of this material. Further interviews with the Director and the Associate Director were also held. The SAS and the Stages of Concern Profiles for each school were also prepared, and data were linked to the cultural variables of the schools. Phase four involved the researcher in returning to each of the schools for further observation as a check on the original data and findings. Semistructured interviews were also held with each of the six school principals and with the Director and Associate Director. Following the last observations and interviews, the researcher made some final revisions and completed the analysis. Phase four took place almost two months after the completion of phase two, and immediately after completing phase three.

Pilot studies were conducted using the instruments prior to beginning the study in order to determine clarity of language, suitable administrative and scoring procedures, and which dimensions of the questionnaires were required to provide the necessary data for the research in a sample of schools that were similar in organization to those used in the actual study. Each is briefly described below.

The School Assessment Survey. The SAS was developed by Wilson et al. (1985) following intensive study of the concepts of coupling and linkages in school organizations. The SAS is a nine-dimensional questionnaire on which teachers' perceptions of the organizational characteristics of the schools where they teach are measured. When all teachers in a school are surveyed using the SAS, "a more accurate portrait can be produced, one that minimizes individual biases. Further, by systematically surveying all teachers in a given school, the full range of perceptions can be presented" (p. 2). For this study, eight of the nine dimensions were chosen: Goal consensus, facilitative leadership, vertical communication, horizontal communication, centralization of the

principal's influence on instruction, centralization of the principal's influence on curriculum and resources, staff conflict, and student discipline. These eight dimensions reflect the progression of relationships down the organizational hierarchy and represent the eight groups of organizational-cultural linkages related to the implementation of innovations (Wilson & Corbett, 1983). The SAS is composed of sixty-four items that comprise eight sets of linkages of eight items each.

The Stages of Concern Questionnaire. The SOCQ was developed from the Stages of Concern dimension of the Concerns-Based Adoption Model (Hall, 1979) and focuses on the concerns of individual teachers involved in implementation and change processes. Hall, George, and Rutherford (1979) indicate that the questionnaire was developed to provide an expedient measure of teachers' stages of concern regarding the implementation of innovations into their classroom teaching practices. Developed and validated over a three-year period, Hall et al. noted that after the being used in cross-sectional and longitudinal studies of 11 different implementation processes, the questionnaire accurately measures stages of concern about an innovation. The SOCQ is composed of 35 items that comprise seven scales of five items each.

Structured and semistructured interview schedules. In order to gather data about the specific policies of the school division with regard to the implementation of the Common Essential Learnings, separate structured interview schedules were prepared for the Director and Associate Director, the principals of the schools, teachers labeled as facilitating teachers, central office consultants, and catalyst teachers. During the last phase of the data collection, semistructured interviews were conducted with the Director and Associate Director and the school principals to gather their views and reactions to the preliminary findings of the research.

Field note observation data. Extensive field notes were made during the four observation visits to each of the six schools. The field notes were collected on the cultural and climate variables in each school.

Printed materials. Printed materials related to the implementation of the Common Essential Learnings were collected, beginning with the earliest planning stages and concluding with documents discussing current and future implementation plans. The materials included minutes of meetings, newsletters, and planning documents.

Data Analysis

The School Assessment Survey. Procedures for analysis were those given by the developers of the instrument. Scores for each school were determined by summarizing item scores for each of the eight dimensions for the teachers in each school. The school scores for each dimension were then placed on separate box and whisker charts where the scores for each dimension were compared with the scores normed by Wilson et al. (1985). On the charts, elementary school scores were compared with those normed for elementary schools, secondary schools were compared with scores normed on samples of secondary schools. Because of the span of the grade organization, scores for the two kindergarten to grade 12 schools were compared with the normed scores for both elementary and secondary schools.

The Stages of Concern Questionnaire. Individuals' responses on the SOCQ from each school were used to compute mean scores for the seven stages of concern for each of the six schools in accordance with instructions for the instrument. The mean scores were then translated to percentiles using the Stages of Concern Quick Scoring Sheet. The percentiles for each of the Stages of concern were then placed on a graph to create a profile of the teachers' Stages of Concern for each of the six schools. When the initial analysis was complete, the Stages of Concern profile and the profile on organizational-cultural linkages created from the SAS data were compared in a chart to determine the existence of relationships between the organizational contexts of each school and the teachers' stages of concern about implementing the Common Essential Learnings.

Structured and semistructured interview data. Data from both interview forms were transcribed separately. The data were coded initially based on whether the interviewees were principals, teachers, central office field staff, or central office administrators. The data were coded a second time to determine common themes related to the implementation processes. The data were coded a third time to determine the existence of data related to the organizational context of the schools, and a fourth time to determine the existence of data related more specifically to teachers' stages of concern toward the implementation process.

Field note data and printed materials. Field note data and printed materials were placed in categories based on the school from which each was collected and the chronological order of the collection. The field notes were then placed verbatim on the Cultural Variable Observation Form, a chart consisting of 14 cultural variables, in the category of the variable or variables they described or to which they were related. After the charts were completed for each of the visitations to the schools, the Cultural Variable Observation Forms were further analyzed to determine the examples that seemed to best represent or illustrate each of the variables on the charts. Some of the related printed materials were also included on the charts of cultural variables. Other printed materials were used as part of the description of the implementation strategies and the linkages between the implementation strategies and the organizational-cultural linkages of the schools.

Findings

School Division Implementation Strategy

The school division strategy for the implementation of the Common Essential Learnings was a mixture of top-down and bottom-up strategies, labeled as a *middle-out* strategy (Seashore Louis & Dentler, 1988). The top-down phase of the strategy included using the 1988-1989 school year as an awareness year, during which introductory inservice sessions were held for teams of principals and facilitating teachers from each of the schools, members of the central office staff, divisional and local boards of education, and, finally, all members of the teaching staff within the school division. Following the initial series of inservice sessions, macro-planning sessions were held to make provision for large-group inservice presentations and for funding to begin the actual implementation in the fall of 1989. The macro-planning sessions were led by the Director and Associate Director of Education, with input from principals

and teachers. The bottom-up phase of the strategy began in the fall of 1989. The in-school teams, comprised of the principal and facilitating teachers from each of the schools, were given the responsibility to work with the teachers in their schools to develop and carry out their own implementation plans. While the research was taking place, the implementation was taking place, to at least some degree, in each of the six schools.

Relationships Between School Division and School Implementation Strategies

In addition to strong leadership, extensive professional development, and clear expectations, the implementation strategy adopted at the school division level affected the subsequent strategies for implementing the Common Essential Learnings in each of the schools in two main ways. The first was that, although this implementation came about as a result of a provincial curriculum policy mandate, which was endorsed by the school division, the teachers and in-school administrators had opportunities to take part in how the implementation of the Common Essential Learnings would take place within their schools.

In addition to granting the teachers and principals a high degree of discretion for their in-school implementation strategies, the Director and Associate Director also provided strong support mechanisms to assist teachers with the implementation. The support mechanisms, which were categorized as cultural, political, and technical, ranged from such things as the Director of Education acting as a role model to positively reinforce the Common Essential Learnings, providing release time for teachers involved in planning for the implementation of the Common Essential Learnings, to providing the assistance of two catalyst teachers to go into classrooms and teach model lessons involving the various Common Essential Learnings.

Implementation Strategies for the Six Schools

The main aspects of the strategies for the implementation that were unique to each of the schools involved in the research were the degrees of discretion and collaboration that teachers had in implementing the Common Essential Learnings into their classroom teaching. In two of the schools, teachers indicated that they had had high degrees of discretion and that they had collaborated extensively among themselves and with the school administration in deciding on the timelines and strategies by which the implementation was to take place. Teachers in two other schools indicated lower degrees of discretion and less extensive collaboration as part of their implementation processes. In the remaining two schools, one group of teachers indicated that they had had moderate degrees of discretion and collaboration, whereas the teachers in the other school indicated that they had had low to moderate degrees of discretion and less extensive collaboration in deciding on the timing and methods for the implementation of the Common Essential Learnings. The variations in the degrees of discretion and collaboration noted were related to variations in the effects of the implementation processes on the reactions of the teachers and on the school organizations. The teachers who expressed the most positive responses and the least resistance to the implementation of the Common Essential Learnings were in schools where high degrees of discretion and collaboration were reportedly involved in the implementation processes.

The Patterns of Organizational-Cultural Linkages

The patterns of organizational-cultural linkages in the six schools were all different from each other and from the patterns observed by other researchers. While the two elementary schools appeared to have tighter linkages than the two secondary schools and one of the kindergarten to grade 12 schools, they had looser linkages than were previously associated with elementary schools (Herriott & Firestone, 1984; Wilson et al., 1985). The pattern for one of the elementary schools indicated tighter political and technical linkages and looser cultural linkages. Related to the continuum of organizational-cultural linkages on the conceptual framework, that school appeared to be close to the image of a negotiated political system. The image of the second elementary school appeared to be a synthesis of the rational-bureaucratic and the negotiated political system since the pattern of the second school appeared to have tighter technical linkages and looser political and cultural linkages.

The two secondary schools also represented two different organizational images. The pattern of linkages in the first school indicated tighter technical and political linkages and looser cultural linkages. Due to the degree of centralization of authority noted in the pattern, the image of the first school appeared on the continuum to be a combination of the institutional image and the image of a negotiated political system. The patterns for the other secondary school appeared more decentralized than that of the first. The cultural linkages appeared to be at mid-range, neither loose nor tight. The political linkages appeared to be looser than the norms of earlier researchers (Firestone & Herriott, 1981; Wilson et al., 1985) while the technical linkages appeared to be tighter than either the political or the cultural. The pattern for this school seemed to resemble that of a loosely coupled system.

One of the unique findings of this research was related to the patterns of organizational-cultural linkages of kindergarten to grade 12 (K-12) schools. Neither Firestone and Herriott (1981) or Wilson et al. (1985) indicate normed research for schools organized in this manner. Since there were no earlier norms on which to compare the patterns of K-12 schools, the patterns of the two schools were compared with each other. When compared, the patterns of the two K-12 schools appeared to be opposites. The pattern of one of the K-12 schools was very similar to the pattern that Wilson et al. had normed for secondary schools, with looser cultural, political, and technical linkages than the other. The image of this school appeared to be best represented as a combination of the loosely coupled system and the negotiated political system. The pattern for the other K-12 school indicated tighter linkages and appeared to be that of a rational bureaucracy with tighter cultural, political, and technical linkages than the patterns found within the norms for either elementary or secondary schools by Wilson et al. (1985).

Organizational-Cultural Linkages and Teachers' Stages of Concern

Despite the differences in patterns of both organizational-cultural linkages and teachers' stages of concern reported from each of the six schools, there did appear to be some interesting relationships between the two. In the two schools where there was a high degree of communication among the teachers, as indicated by the horizontal communication dimension on the SAS, and lower degrees of centralization of the principals' influence on instruction, less

teacher-principal communication about instruction, and less staff conflict, the teachers' refocusing concerns on the SOCQ were lower and they appeared to have more positive responses toward the implementation processes in their schools. Relating these findings to interview data on the implementation processes in the two schools, the principal of one of the schools indicated that, "We got input from teachers as to how fast they wanted to go in some areas." One of the teachers and a vice-principal also commented that, "We've been given a lot of leeway and so our staff has just gone with it. We could work at it at our own pace." Discussing the degree of communication among teachers with regard to the implementation, the vice-principal further commented that, "I see a lot of communication going on among teachers in various grade levels; there's been a lot of enthusiasm generated from that." The principal of the second school commented that, "Our strategy is being done cooperatively; we haven't been putting a lot of pressure on. I see teachers doing this on their own." He thought that by beginning the implementation more slowly and exerting less pressure on the teachers there was less resistance to the implementation. He commented that, "We have had next to no resistance to the implementation."

Discussion

Although a number of the findings from this research tend to support earlier findings of other researchers, others are less supportive or move beyond the findings of earlier researchers. The findings regarding the implementation strategy used by the school division the implementation of the Common Essential Learnings are similar to strategies described by Cuban (1984) and Seashore Louis and Dentler (1988). The strategy described in this research had both top-down and bottom-up components that created a middle-out strategy. The main strength of this strategy, to help create a vision and a feeling of ownership for the innovation among the innovators, appeared to be having the same type of positive results between the school division and the schools examined in this research process and those situations examined and discussed by earlier writers. However, these findings go beyond the work of earlier theorists by relating top-down and bottom-up aspects to time factors. The top-down strategies appeared to have been most useful in the initial phases of the implementation or wherever strong new spurts of initiative were or would be required. The bottom-up strategies appeared to be most effective in later stages of the process after the meaning of the innovation has become clearer to the teachers in the schools. Signals of the increased meaning and clarity of the innovations become evident when the goals for implementation become included in the instructional goals and objectives of classroom teachers.

Further support for the encouragement and development of bottom-up implementation strategies came from the findings of Barrett and Fudge (1981b), Common (1983), and Deasy (1984). They indicate that the implementation of policies and programs in schools is greatly assisted and enhanced by high degrees of collaboration among the teachers doing the implementing. High degrees of collaboration among teachers involved with implementation processes are likely to lead to greater understanding of the innovation and a

clearer meaning of what it will mean to their own work and that of their students.

Closely related to collaboration is the need for discretion among teacher-implementers. Collaboration and discretion are both positive and necessary factors to the success of implementation processes. While Common (1983) stresses the relationship between the strength of the political linkages controlled by teachers and the success of implementation processes, Deasy (1984) stresses the need for teacher discretion that encompasses the cultural and technical as well. The findings related to teacher discretion supported by cultural, political, and technical linkage mechanisms are also strongly supported by Corbett and Rossman (1989). They indicate that policy mandates such as the one for the Common Essential Learnings are most successfully implemented in situations where clear educational goals are enhanced by public and professional support mechanisms and where the mandate is feasible for the designated setting. Findings from this research relate to the earlier findings that the support provided through technical, political, and cultural linkages to each of the school implementation processes seemed to provide both the necessary vision and support to assist with the implementation.

The findings on the patterns of organizational-cultural linkages noted among the six schools corroborated some earlier findings, differed from others, and extended those of other researchers. Firestone and Herriott (1981) found that the varying degrees of linkages among the parts of organizations create different images of what schools are like and how they operate. Their research explored a continuum of organizational images on which schools have been examined and compared. Similar to their earlier findings, that individual schools could be seen as a combination of images, three of the schools in this research appeared on the continuum as combinations of images. Significant differences were noted between the findings of this research and the work of earlier researchers (Herriott & Firestone, 1984; Wilson et al., 1985) who attempted to relate patterns of linkages to the grade organizations of schools. The patterns of linkages reported among schools in this study appeared to be related more to the interactions and cultures of the schools than to the grade organizations. Although the two elementary schools appeared to have tighter linkages than the two secondary schools, they also appeared to have looser or fewer linkages than the elementary schools studied in earlier research by Herriott and Firestone and Wilson et al. Secondary schools also appeared to differ in patterns of linkages from the earlier findings of other researchers. Most significantly, the findings on patterns of linkages in K-12 schools make a unique contribution to the literature, since little or no research on schools of this nature appears to exist. The fact that the images of the two K-12 schools were opposites further substantiates that schools can be combinations of images and that each school is likely to have its own unique pattern of linkages that is likely to vary over time with changes in personnel, student enrollment, technical, or instructional policies.

The findings on relationships between dimensions of organizational-cultural linkages and teachers' stages of concern toward the implementation of the Common Essential Learnings add to the earlier theories and findings of

Barrett and Fudge (1981a), Common (1983), and Seashore Louis and Dentler (1988), who all stressed the need for teacher collaboration and discretion in planning for the implementation of curriculum policies and instructional changes into their daily work. The findings were also related to the concept of simultaneous loose-tight coupling noted by Peters and Waterman (1982), in that lower levels of direct supervision are replaced by higher levels of group collaboration and cultural influence. These findings go beyond the work of earlier theorists, however, in that they appear to identify specific categories and patterns of linkages that school organizations need to consider when attempting to develop a pattern of organizational-cultural linkages that will provide a nurturing environment for the implementation of innovations.

The findings noted in this research related to goal consensus and leadership in schools differed somewhat from the findings of earlier researchers. Both Ogawa and Bossert (1989) and Wilson and Corbett (1983) indicated that strong leadership and well-defined goals were important cultural linkages for assisting with implementation processes and assuring the spread of an innovation throughout a school organization. Despite these earlier claims, teachers in both of the schools where the implementation processes were proceeding most positively reported only moderate levels of goal consensus and a moderate degree of principal influence on their instructional work in the classroom. It is likely that higher degrees of collaboration assisted in promoting greater understanding among teachers so that they were able to work toward the common goals of implementation without high levels of consensus on sets of more general educational goals or high levels of facilitation and supervision by principals.

Summary and Implications

The purposes of this article were to describe the research design and findings from a recently completed study on the implementation of a curriculum policy mandate. The findings from this study regarding implementation strategies moved beyond those of earlier studies in that they attached a time element to the top-down and bottom-up sequence. The findings of this research also contributed with regard to patterns of organizational-cultural linkages in schools. Patterns of linkages in each of the six schools studied differed from each other and from those in the schools previously studied by other researchers. These unique patterns did not appear to be related to the grade organizations of the schools. There were no previous norms on which to compare the two kindergarten to grade 12 schools. In the relationships between the organizational-cultural linkages and their stages of concern about the implementation of the Common Essential Learnings, teachers indicated the fewest negative concerns and the least resistance to the innovation in the schools where they shared the greatest amount of communication and collaboration with their colleagues and where there was less direct centralization and control over their instructional work by principals. Only moderate degrees of consensus, toward a set of general educational goals, were noted in the two schools where teachers' responses to the implementation were most positive.

Implications for changes in the approaches to both research and practice need to be contemplated as a result of the findings of this study. Described in

this article are findings from six mini-implementation processes. Two of the six appeared to be moderately successful, two somewhat successful, and in the remaining two progress toward implementation was barely visible. In a school where little progress toward the implementation of the Common Essential Learnings was noted, one teacher indicated, “Many teachers feel top-downed. The idea that teachers have any kind of control isn’t right.” The teacher further indicated that many of the opportunities that teachers were given to have input into the implementation process was seen by at least some of the teachers as “pseudo control.” Although more light has been shed on implementation processes and a certain degree of progress has been noted, one cannot quell the desire to search for more meaningful ways to develop and implement changes to curriculum and instruction. The implementation processes examined in this study appeared to be derived by a few individuals, and driven, front-end fashion, into the work lives of teachers as part of a larger provincial policy mandate.

As researchers and developers of curricular and instructional changes, perhaps we need to spend more time and resources on exploring questions about significant and desirable changes to curriculum and instruction with teachers, students, parents, and community members who are really the key players and beneficiaries of the outcomes of changes, both positive and negative. Perhaps instead of developing elaborate schemes for convincing individual teachers and participants to implement policies derived by relatively few individuals, all of the key players need to think deeply, together, about what changes are needed and how to bring them about. While thoughts of such dialogues may be fraught with some degree of messiness and discontinuity, the final results stand the chance of being no more expensive and at least as effective as innovations and schemes that teachers are presently being pressed to implement.

In 1982, Fullan noted:

Where are we in the history of educational change? Surprisingly, given all the technological brouhaha of modernity, we are near the beginning, if we use serious attempts at *change in practice*—at implementation—as the criterion of progress. Being at the early stages of a complex undertaking, we have an obligation to be neither insultingly optimistic nor boringly pessimistic. We have seen many failures, but also some successes even under adverse circumstances. What is more, we understand better why things turn out as they do. Our knowledge is catching up to our information. Both are getting better. (p. 288)

Much of what is stated in Fullan’s quotation could have been written today. We have seen failures in implementation processes, yet we have also seen successes. The findings related to top-down, middle-out, and bottom-up implementation strategies, the importance of teacher collaboration and discretion in implementation strategies, organizational-cultural linkages, and their relationships to teachers’ responses and concerns about implementation processes will be useful in the development of future policies for changes to curriculum and instruction. The most important of these, collaboration, discussion, and discretion, are likely to be extremely useful for drawing all of the key participants into the development of future curricular and instructional policies that will truly bring about meaningful educational changes.

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Dress for Respect: The Effect of Teacher Dress on Student Expectations of Deference Behavior

Although the concept of respect is commonly used by educators, it has not been defined for use in empirical studies. Although mode of dress has been shown to affect deference behavior, no general measure of deference has been defined. A 12-item questionnaire to measure respect for the teacher in a classroom setting was constructed using the method of summated ratings. The questionnaire was completed by 200 junior high school students who were shown either a photo of a teacher in formal dress or a photo of the same teacher in casual dress. The students expected more respect to be shown to the teacher in formal dress, $t=2.982$, $p<.0032$. An item analysis showed differences in expectation to be significant only for those questions that identify deference behavior.

Bien que le concept de respect soit d'usage courant parmi les éducateurs, son emploi dans les études empiriques n'a pas été défini. On a montré que la tenue a un effet sur le comportement de déférence; cependant aucune mesure générale de celui-ci n'a été définie. Un questionnaire à douze items pour mesurer le respect envers le maître en classe était construit par la méthode des indices additionnés (summated ratings). Deux cents élèves du cycle secondaire moyen à qui on avait montré la photo d'un maître, soit en tenue formelle soit en tenue ordinaire, ont répondu au questionnaire. Les élèves ont prédit que le maître en tenue formelle sera plus respecté que le maître en tenue ordinaire ($t=2.982$, $p<.0032$). Une analyse d'items a révélé que les différences de prévisions étaient significatives seulement pour les items qui identifient le comportement de déférence.

Teachers and principals often wonder whether their mode of dress affects the respect they get from their students. Published research, however, will not answer their question. Although educators use the concept of respect as a matter of course, this concept has not been defined for use in empirical studies.

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Although there is one rating scale for the communication of respect in interpersonal situations which requires an observer to identify what is said as communicating no, little, positive, deep, or the very deepest respect (Carkhuff, 1969), the most closely related research has measured deference behavior. In each study, the measure of deference used was part of the experimental design and followed experimental manipulation of subjects' behavior.

People more frequently violated pedestrian traffic signals if a person dressed as a high status individual first crossed against the light (Lefkowitz, Blake, & Mouton, 1955). Dimes left in phone booths were more likely to be returned if the person asking for the dime wore clothing indicating high social status (Bickman, 1971). Older subjects were more willing to answer a smartly dressed experimenter than an untidy experimenter (Lambert, 1972). Smartly dressed experimenters received more written feedback than casually dressed experimenters regardless of self-ascribed status (Giles & Chavasse, 1975).

Formal dress has been found to elicit more deferential behavior than casual dress in a university setting (Fortenberry, MacLean, Morris, & O'Connell, 1978). Subjects have responded more positively to conventionally dressed experimenters requesting signatures (Chaikin, Derlega, Yoder & Phillips, 1974; Samuel, 1972), cooperation (Raymond & Unger, 1972), or dimes (Klinke, 1977), handing out election information (Darley & Cooper, 1972), or requesting them to stop to respond to a survey (Walker, Harrison, & Costello, 1980), or to examine a petition (Bickman, 1974; Walsh, 1977).

Not all studies have shown positive response to high status dress. "Hippie" dress got more signatures than straight dress when a petition was presented to demonstrators at a peace march (Suedfeld, Bochner, & Matas, 1971). While the wearing of a tie increased positive response to an interviewer among middle class subjects, no difference was found for working class subjects (Green & Giles, 1973). Mothers were not more likely to accept a psychologist's recommendation if he wore a jacket and tie (Wasserman & Kassonove, 1976). A study done in an English suburb failed to find an effect for dress in a study in which different modes of dress were coupled with different accents (Giles & Farrar, 1979).

Some studies of the effect of dress have been done using photographs or drawings. Dress differences have a significant effect on the ratings given photos of adolescents by adolescent subjects (Hamid, 1969). Subjects rated drawings of a female job applicant as making a better impression when she was drawn as wearing a jacket or vest (Rucker, Taber, & Harrison, 1981). A woman in a jacket and skirt was seen as happier, more successful, more feminine, more attractive, more intelligent and more desirable as a friend than the same woman photographed in more casual dress (Harris et al., 1983).

No studies of the effect of dress on respect or deference behavior have been done in a classroom setting.

Instrument Development

As there is no measure of deference behavior suitable for use in a classroom setting, the experimenters designed an instrument using the method of summated ratings (Likert, 1932-33) that measured student expectation of behavior by fellow students that would indicate deference or respect. Relying on the observation that principal teachers generally get more respect from students

than substitute teachers, 22 questions concerning student behavior, which in the opinion of the experimenters indicated respect or lack of respect for the classroom teacher, were tested on a group of junior high school students, half of whom were asked “If the principal were teaching this class would your friends ...?” while the other half received the question “If a substitute teacher were teaching the class would your friends ...?” The 12 questions that survived this test, clearly differentiating between the principal and the substitute teacher, made up the final questionnaire. Of these questions, seven were phrased so that a positive answer indicated respect while five were phrased so that a positive answer indicated lack of respect.

Procedures

In the formal dress condition a picture of a male teacher of normal appearance (perhaps somewhat handsome) wearing a three-piece business suit was produced at the top of each questionnaire. In the casual dress condition, a picture of the same teacher wearing a T-shirt and jeans was at the top of the questionnaire. Pose, facial expression, and situation were typical for a classroom teacher and did not vary between the pictures.

The questionnaires were sorted into a random order and one was given to each of 200 grade 7 students in a junior high school in a predominantly middle-class suburb of Halifax by their home room teachers at the beginning of home room period. The students were instructed to answer the questions honestly and seriously and without looking at any other student’s questionnaire.

Of the 200 responses 12 were discarded because of double checking of answers or other defects. The remaining 188 were scored and the mean scores of each group compared using Student’s t-test for independent random samples (Student, 1908). The internal reliability of the instrument, Cronbach’s alpha (Cronbach, 1951), was .79 for this sample.

Results

A significant difference was found, $t=2.982$, $p<.0032$, in favor of the formal dress condition. Means and standard deviations are shown in Table 1. The size of the effect found was measured using the standardized mean difference d_s (Cohen, 1977). The standardized mean difference was 0.4. Cohen categorizes a standardized mean difference of 0.5 as a medium size difference, “one large enough to be visible to the naked eye” (p. 26).

Table 1

	Casual dress	Formal dress
mean		
(over 12 questions)	33.6	36.6
standard deviation	7.32	6.55
N	96	92

$t = 2.982$
 $p<.0032$
Means and standard deviations on respect questionnaire.

Table 2
If this teacher was teaching the class

Question	Formal mean	Casual mean	Significance of Difference
1. Would your friends do assignments given by him?	3.446	3.312	$p = .3643$, NSD
*2. Would your friends make smart remarks to him?	2.946	2.500	$p = .0056$
*3. Would your friends disrupt the class?	2.837	2.510	$p = .0458$
4. Would your friends pay attention in his class?	3.076	2.844	$p = .1311$, NSD
5. Would your friends think he is fair?	2.793	3.135	$p = .013$
6. Would your friends be quiet in his class?	2.543	2.167	$p = .0156$
*7. Would your friends be late for his classes?	3.457	3.000	$p = .0036$
8. Would your friends offer to help him if it seemed help was needed?	3.207	3.021	$p = .2747$, NSD
*9. Would your friends damage his classroom?	4.120	4.010	$p = .4632$, NSD
10. Would your friends talk to him about personal problems?	1.946	1.781	$p = .2497$, NSD
11. Would your friends work quietly in his class?	3.022	2.510	$p = .0015$
*12. Would your friends ignore detentions he gave?	3.207	2.781	$p = .0138$

Scale

- 1 definitely not
- 2 probably not
- 3 don't know
- 4 probably
- 5 definitely

* These questions were reflected before summing: for all questions a higher score implies a larger addition to the total score for perceived respect.

An item by item analysis of the results showed that all the questions except 5 discriminated in the direction anticipated. However, of these, only questions 2, 3, 6, 7, 11, and 12 discriminated strongly enough to reach significance as single items. These items measure features of respect that are features of deference behavior. Of those questions measuring what the experimenters considered other aspects of respect, 5, 8, and 10, two failed to reach significance, while question 5 was significant but in the wrong direction, students being more likely to expect their friends to think the casually dressed teacher fair.

A post hoc analysis showed the instrument consisting of the nine questions measuring expectation of deference behavior to differentiate between formal and casual dress at the $p=.0006$ level ($t=3.50$) with a standardized mean difference of 0.5 and an internal reliability of .80.

Conclusion

Formal dress appears to have an effect on junior high students comparable to the effect it has on adults. Students expected the formally dressed teacher to be shown more deference by their fellow students. This significant difference did not extend to expectations for behavior included in the authors' intuitive concept of respect which are not expectations for deference behavior. A possible practical implication of this research is that teachers for whom the first impressions of students are important (substitute teachers, student teachers, or any teacher on the first day of classes) might consider high status dress as

having the potential to increase the likelihood of student expectations of deference behavior.

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School Effectiveness and Leadership

The literature on school effectiveness suggests that principal leadership is an essential ingredient in creating and maintaining an effective school. Research utilizing a contingency approach appears promising in studying the school-based phenomenon of school effectiveness. For the past two decades Fiedler's (1967) Contingency theory has been the most frequently used approach to study leadership from a situational perspective. A meta-analysis of studies employing the Fiedler model conducted by Crehan (1984) suggested that the theory may have limited applicability to schools. A study was designed to examine the effect of leadership style of the elementary principal on school effectiveness. Findings from the study would provide a test of Fiedler's theory in relation to a major concept in the literature, as well as test the concerns expressed by Crehan (1984) in her meta-analysis. The study measured school effectiveness as perceived by 900 teachers in 176 schools. Data were collected through a series of questionnaires. Leadership style of principals was measured by the Fiedler Contingency theory instruments; Least Preferred Co-worker (LPC), Group Atmosphere (GA), Task Structure rating scale (TS) and Principal Position power scale (PP). Two major hypotheses were tested. Results of the study challenge the suitability of Fiedler's Contingency theory in studying schools. Neither of the major hypotheses was supported. The major postulate of the theory that group effectiveness is determined by a combination of the leadership style of the principal and the situational favorability for the principal was not supported. The findings indicate that additional situational factors may be contributing significantly to group effectiveness. Major weaknesses in the measurement of leadership style in the Fiedler model are identified. Suggestions for modifications required to make the model more applicable to the school situation are presented.

La littérature ayant trait à l'efficacité de l'école suggère que le leadership du directeur est un ingrédient essentiel dans l'émergence et le maintien d'une école efficace. La recherche utilisant une approche de contingence paraît prometteuse pour ce qui est de l'étude du phénomène scolaire de l'efficacité de l'école. Durant ces deux dernières décennies, la théorie de contingence de Fiedler (1967) a été l'approche la plus utilisée dans l'étude du leadership du point de vue situationnel. Une méta-analyse des études utilisant le modèle de Fiedler conduite par Crehan (1984) a suggéré que la possibilité d'appliquer la théorie aux écoles serait peut-être limitée. Une étude était conçue pour examiner l'effet du style de leadership du directeur de l'école élémentaire sur l'efficacité de l'école. Les résultats de l'étude pourraient fournir une évaluation de la théorie de Fiedler concernant un concept important dans la littérature, et pourraient être un test des idées exprimées par Crehan (1984) dans sa méta-analyse. L'étude a mesuré l'efficacité de l'école telle que perçue par 900 enseignants dans 176 écoles. La collecte des données a été faite par une série de questionnaires. Le style de leadership des directeurs a été mesuré par les instruments de la théorie de contingence de

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Fiedler: Least Preferred Co-worker (LPC), Group Atmosphere (GA), l'échelle Task Structure (TS), et l'échelle Principal Position power (PP). Deux hypothèses majeures ont été testées. Les résultats de l'étude constituent un défi à la pertinence de la théorie de contingence de Fiedler dans l'étude des écoles. Aucune des hypothèses principales n'a été corroborée. Le postulat majeur de la théorie selon lequel l'efficacité du groupe est déterminée par un mélange du style de leadership du directeur et des conditions situationnelles favorables au directeur n'a pas été supporté. Les résultats indiquent que des facteurs situationnels additionnels contribueraient d'une manière significative à l'efficacité du groupe. Les principales lacunes dans la mesure du style de leadership dans le modèle de Fiedler sont identifiées. Des suggestions concernant les modifications requises pour rendre le modèle plus applicable à la situation scolaire sont présentées.

Introduction

Researchers have been investigating the topic of organizational effectiveness for over 100 years (Lewin & Minton, 1986). In spite of the longevity of the construct and the popularity of the subject, a considerable amount remains to be done to arrive at a suitable model. The topic of school effectiveness has been receiving increased attention in the past few years. To date, the research on school effectiveness has identified a number of factors that appear important in identifying effective schools. One factor that appears consistently in all of the studies is principal leadership.

Early studies (Stogdill, 1948) in the area of leadership concentrated on the characteristics or traits that people brought to a particular position. Subsequent studies focused on the specific behaviors an incumbent displayed in a leadership position. In the last several years many researchers (Fleishman, 1973; House & Baetz, 1979) are suggesting that some form of contingency approach is necessary to determine leadership effectiveness. A number of contingency models are available in the literature; however, the theory proposed by Fiedler has received constant attention since it was presented in 1967.

Studies on school effectiveness have shown that a number of factors at the school level combine to produce an effective organization. Among these, the school principal has been suggested as playing a key role. The purpose of the present article is to examine the effect of leadership style of the principal on school effectiveness using Fiedler's Contingency theory.

School Effectiveness

Research studies on school effectiveness conducted during the 1950s and early 1960s, (Goodman, 1959; Mollenkopf & Melville, 1956) were largely optimistic in concluding that there was a direct relationship between the quality of school services provided to students and their subsequent achievement. However, Collard (1984) noted many methodological problems with the research at that time; for example, many of the studies did not examine the confounding influence of factors outside the school.

Consistent with this perspective, studies by Coleman et al. (1966) and Jencks et al. (1972) concluded that schools have little effect on a child's achievement that is independent of background and social context, and that variations in achievement scores are more likely to be a result of background factors rather than schooling. Such contradictory conclusions have contributed to the proliferation of research on school effectiveness during recent years.

The more recent literature on school effectiveness concludes that there are structural differences among schools that affect students' academic achievement. Studies on the determinants of achievement have been concerned with variables relating how schools and school districts are structured and make decisions, the process of change in schools and school districts, and the way in which classrooms and schools can increase the amount of time spent on productive instruction (Purkey & Smith, 1983, p. 428).

Weber (1971) was one of the first researchers to test the hypothesis that schools can make a difference. He studied four effective schools from a nomination list of 96 throughout the United States. He visited each of the schools, administered additional achievement tests, and interviewed and observed principals and staffs. From his case study reports on each school he found a number of factors common to each school, for example, high expectations, orderly climate, and stress on reading. Subsequent studies (Austin, 1978; Brookover & Lezotte, 1979; Shoemaker & Fraser, 1981) were designed to identify specific factors that differentiated between high achieving schools and low achieving schools. Factors associated with high achieving schools were as follows: positive pupil-teacher interaction, frequent informal classroom observations by the principal, a set of school-wide practices for reading instruction, attention to atmosphere conducive to learning, and open communication with parents and community.

A longitudinal study by Mortimore, Sammons, Stoll, Lewis, and Ecob (1986) not only concluded that schools do make a difference, but also identified a number of factors that promote effectiveness. These factors included purposeful leadership of the staff by the head teacher, involvement of the deputy head, involvement of teachers in the school's operation, consistency among teachers, structured sessions, intellectually challenging teaching, work centered environment, maximum communication between teachers and students, good record keeping, parental involvement, and positive climate.

A review of the literature conducted by Oakley (1989) delineated seven factors as having importance for school effectiveness, including: (a) strong leadership on the part of the principal, (b) high expectations by the principal and staff for student achievement, (c) a positive, orderly climate, (d) emphasis on basic skills development, (e) clearly stated, well-defined goals, (f) frequent and systematic evaluation of students, and (g) good home-school relations.

The Principal as Leader

A review of the literature on school effectiveness indicates that the principal plays an important leadership role. Wright and Renihan (1985) note that school leadership, that is, principal leadership, is critical in influencing how effective a school will be. There is a well-documented body of literature in educational administration (Fullan, 1982; Geering, 1980; Leithwood & Montgomery, 1981; Lipham, 1977) indicating the importance of the principal on many varied aspects of school operations. Rutter, Maughan, Mortimore, Quston, and Smith (1979) in an extensive longitudinal study of school effectiveness made the following observation:

Having found evidence of considerable differences in both overall climates and the particular practices of schools, it is now important to go on to inquire how such climates become established and then maintained or changed. Obviously

the influence of the head teacher (principal) is very considerable. We did not look in any detail at the particular styles of management and leadership which worked best; this is an issue which is now important to investigate. (pp. 202-203)

Further support for investigating the situational context of the principal comes from the work of Rowan, Bossert, and Dwyer (1983). They suggest the feasibility of using contingency theory to analyze the varying effects of organizational structures in school settings.

Contingency theories have been a dominant approach among leadership researchers for the last two decades (Schemerhorn, Hunt, & Osborn, 1982). The basic guiding principal of contingency theory is that the most appropriate leadership in terms of follower outcomes is a question of contingencies facing the leader (Hunt, 1984). As the study of leadership effectiveness evolved it has become increasingly apparent that leadership is a product of at least three components: the leader, the led, and the situation in which they all function (Crehan, 1984). Theory proposed by Fiedler (1964) has become one of the most widely used models in the study of the school principal (Crehan, 1984).

In summary, a number of researchers (Geering, 1980; Sackney, 1986) stress the pivotal role played by the principal in stimulating the performance of personnel in the school setting. Principal behavior appears to be influenced by a number of internal and external situational factors. These factors seem to have an impact on school effectiveness. Fiedler's contingency theory appears to be a sophisticated approach to examining the complex relationships among the leader, the led, and the situation. To date, Fiedler's contingency theory has not been utilized with regard to principal leadership and its effect on school effectiveness. The next section of the article describes the Fiedler model and its proposed strength in attempting to determine specific characteristics of school effectiveness.

Fiedler's Contingency Theory

Fiedler's theory maintains that different situations require different leadership styles. The leadership style of the leader and the degree of situational favorability of the group determines group effectiveness. Therefore, in schools, Fiedler (1967) suggests that group effectiveness is determined by a combination of the leadership style of the principal and the favorableness of the situation for the principal. This section of the article begins with a brief description of the situational favorableness dimension.

Fiedler (1967) developed a taxonomy of groups that included counteracting, coacting, and interacting. Definitions for each of the task groups identified were as follows: counteracting groups are typically engaged in negotiations and bargaining processes; coacting groups work relatively independently of other team members; and interacting groups need to work together to perform the task. Fiedler maintains that the leader's role must be different for each group type. He believed that there were three situational variables which were most important in the classification of interacting groups. Because the study reported in this article deals with interacting groups in a school situation, the three situational variables were measured. These included (a) the interpersonal relationship between leader and members; (b) the structure of the task; and (c) the leader's position power.

The group atmosphere variable is considered by Fiedler (1967) to be the most important of the three situational variables. It refers to the leader's effective relations with group members, to the acceptance the leader can obtain, and to the loyalty the leader can engender (Fiedler, 1967). Studies by Fishbein, Landy, and Hatch (1969) and Nebeker (1975) suggested that this dimension was the most important single determinant of leadership. Leader member relations is assessed by having either the leader or the group complete the Group Atmosphere Scale (GA). The instrument is a 10-item semantic differential scale. A further description of the instrument is provided in the methodology section.

Task structure is considered by Fiedler to be the second most important situational variable. The leader's control is increased as task structure is increased (Fiedler & Chemers, 1974). The extent to which the task is structured or unstructured is determined by four components: decision verifiability; goal clarity; goal path multiplicity; and solution specificity, for example, a structured task is characterized by high decision verifiability, high goal clarity, path simplicity, and high solution specificity (Fiedler, 1967). Task structure is determined by having the leader complete the Task Structure Rating Scale (TS). The scale consists of 10 items covering the four components of task structure. In this context Fiedler views task structure in terms of the task the group is required to perform. To the extent that the group successfully accomplishes the task, the leader is said to be effective. In this study this refers to the degree to which teachers completed the task of successfully achieving the school effectiveness components.

Position power is viewed by Fiedler as the least important of the situational variables. This variable is the degree to which the position itself permits the leader to gain compliance from group members. This definition closely aligns with French and Raven's (1958) concepts of legitimate power and reward and punishment power (Fiedler, 1967). The contention is that the more position power the leader has, the greater will be his or her control and influence over group members. It was Fiedler's (1967) belief that it was rarely necessary to rate position power, since almost all leaders have high position power. However, to accomplish the task, a Position Power (PP) questionnaire was developed by Fiedler. This aspect has always been somewhat controversial in the literature as it relates to schools (Crehan, 1984). Whether principals are considered to have high position power in schools is consistently a topic of debate.

To complete the situational favorability dimension, Fiedler (1967) a priori dichotomized the situational variables into good and poor leader-member relations, structured and unstructured tasks, and strong and weak position power. These were combined to yield eight different categories called *octants*. The eight octants were then arranged by Fiedler in an order that represented the amount of control and influence provided for the leader by each situation, or the degree of favorableness for the leader, as represented in Figure 1.

During Fiedler's (1967) earliest work in the area of psychology, he was interested in designing an instrument to measure interpersonal relations. Fiedler noted that there was a positive correlation between the competency of leader and the perceived similarity between leaders and followers. In his research, respondents were asked to describe their least preferred co-worker.

Octant	I	II	III	IV	V	VI	VII	VIII
Group atmosphere	good	good	good	good	poor	poor	poor	poor
Task structure	high	high	low	low	high	high	low	low
Position power	strong	weak	strong	weak	strong	weak	strong	weak

Figure 1. Favorableness for the leader concept (Fiedler, 1967, p. 176).

It appeared that how people view their co-workers gave an indication of their fundamental views of working in an organization. With respect to leaders it appeared that their views of co-workers was related to their underlying approach to administration, that is, if leaders viewed their co-workers in a positive way, they tended to be humanistic administrators. Fiedler’s research led to the development of the Least Preferred Co-worker Scale (LPC). To complete the instrument, each respondent is asked to think of all the people with whom he or she has ever worked, then to focus on the one person with whom he or she found it the most difficult to cooperate. This person is known as the least preferred co-worker. This person can be someone the respondent is currently working with or has worked with any time in the past. To describe that person, the respondent completes a 16-item semantic differential scale. An example of the LPC scale is as follows:

Pleasant	8	7	6	5	4	3	2	1	Unpleasant
Friendly	8	7	6	5	4	3	2	1	Unfriendly
Open	8	7	6	5	4	3	2	1	Guarded

Respondents indicate where on this range of eight points they would place their target person. Thus a score on the 16 items could range from a low of 16 to a high of 128. According to Fiedler (1977) a score below 58 indicates a low LPC leader, that is, an individual who describes his or her co-worker in a negative fashion would be described as a task-oriented leader. A score above 63 indicates a high LPC leader. The person in this category describes his or her co-worker in a positive fashion and would be described as a relation-oriented leader.

Throughout the Fiedler literature LPC scores have been interpreted as an index of relationship-versus-task orientation; the high LPC individual is depicted as relationship-oriented, while the low LPC individual is believed to be task-oriented (Fiedler, 1973). The implication that leaders’ regard for co-workers reflects their fundamental views of administration has not received unanimous support (Crehan, 1984). Although some studies support the interpretation of LPC scores as an index of relationship-versus-task orientation, others have expressed strong doubt. Fiedler attempts to reconcile these major differences by stating:

Leaders tend to behave in a human-relations-centred manner in one situation but in a job-oriented manner in another. This means that we cannot define leadership style by leadership behavior. There are no generally considerate

leaders, only those who are considerate in some situations and inconsiderate in others. (Fiedler & Chemers, 1974, p. 102)

A motivational interpretation of LPC was proposed by Fiedler (1977) to account for these fluctuations. This suggests that people have different goals but also their motivation to achieve them corresponds to the importance they attach to each goal. Therefore, Fiedler (1973) states that high LPC persons are motivated primarily to achieve successful interpersonal relations. Their secondary goals include self-enhancement, prominence, and esteem for others. The primary goal of low LPC persons is directed toward goal attainment. Their secondary goals focus on interpersonal relations, especially if such relations will contribute to task achievement. When the situation is stressful, the high LPC leaders will seek to accomplish the goals most important to them, the needs for affection, approval, and status, while the low LPC leaders will focus on their most important goals, the needs involving goal attainment. Under favorable conditions when leaders know that their primary goals will be achieved, high LPC leaders will focus on their task accomplishments and on seeking status and esteem from others, for example, their superordinates, while low LPC leaders will focus on being considerate and person-oriented.

As it applies to the school context, Fiedler's theory predicts that low LPC principals are more effective than high LPC principals when the situation is favorable or unfavorable, and that high LPC principals are more effective than low LPC principals when the situation is moderately favorable.

In spite of continued controversy, Fiedler's leadership theory has generated voluminous studies in education. Since the McNamara (1968) study, additional researchers (Faulkner, 1981; Garland, 1973; McKague, 1970; Thomson, 1972;) have investigated the relationships among the principal's leadership style and a variety of variables. These variables included such topics as level of bureaucratization, school achievement on standardized tests, organizational climate, and school supervisory practices. Crehan (1984), in a meta-analysis of the research, found over 400 studies using Fiedler's theory, either partially or completely. She was somewhat critical of studies in educational settings, citing methodological concerns. Her final comment was that it was not possible to draw conclusive evidence for either support or nonsupport for the theory. An analysis of the literature (Oakley, 1989) indicated that the Fiedler model has not been related to the variable of school effectiveness.

The present study was designed to test Fiedler's Contingency theory using school effectiveness as a measure of group effectiveness. The study could provide some possible modifications as proposed by Crehan (1986) or indicate that the Fiedler theory appears to be of dubious value in predicting school effectiveness. For this study, group effectiveness consisted of the following seven components as identified in the school effectiveness literature: strong leadership on the part of the principal; high expectations by the principal and staff for student achievement; a system for monitoring student progress; a positive, orderly climate; emphasis on basic skill achievement; clearly stated, well-defined goals; and good home-school relations. Schools designated as effective, using a variety of criteria, have been found to have these characteristics.

Hypotheses

1. There will be a negative correlation between LPC scores of elementary principals and school effectiveness when the situational favorability for the principal is high.
2. There will be a positive correlation between LPC scores of elementary principals and school effectiveness when the situational favorability for the principal is moderate.

Instrumentation

A measure of school effectiveness was required that contained items reflecting the seven components previously identified in the literature as characterizing an effective school. A review by Guzzetti (1983) identified several instruments in use in school districts; however, most had been designed for school improvement projects. Because the proposed study was descriptive in nature and few reliability and validity measures were available on existing instruments, it was decided to modify Bohac's (1985) School Effectiveness Questionnaire. Bohac had validated her instrument with a random sample of urban and rural schools in Canada in a similar population to that proposed for this study.

Bohac (1985) developed her questionnaire based on the conceptual framework developed by Steers (1976), as well as on criteria identified from the organizational and school effectiveness literature. Using a panel of judges, she reduced an initial list of over 100 criteria to 60. Following extensive reliability and validity measures, a 37-item questionnaire was developed. Because the Bohac instrument was heavily loaded on two dimensions for her specific study, a validity and reliability process was undertaken to modify the instrument for the proposed study. Additional items were added to the instrument from literature findings so that the first draft of the modified instrument contained 49 items.

A panel of judges was selected to assist in the validation process. The judges were asked to categorize each item into the appropriate seven components of school effectiveness. It was decided to include only those items on which six or more judges agreed on the classification. The judges were also asked to identify any ambiguous items. This process resulted in rewording a number of items and the elimination of 12 items. The revised questionnaire was administered to a group of teachers who were asked to complete the questionnaire in relation to their school. This procedure did not result in any changes to the questionnaire.

To ensure reliability of the instrument, it was administered to two classes of 24 teachers who were enrolled in graduate classes. Internal consistency reliability was determined using Cronbach's alpha coefficient. The overall reliability coefficient for the questionnaire was 0.95. In two of the seven components it was found that the alpha could be significantly increased by eliminating one item. Therefore, the final version of the questionnaire had 35 items with the breakdown and alpha coefficients shown in Table 1.

As previously discussed, the Least Preferred Co-worker Scale (LPC) is a 16-item semantic differential, Likert-type scale developed by Fiedler (1964). LPC scores have a high internal consistency, with split-half coefficients of over .90 reported. Gruenfeld, Rance, and Weissenberg (1969) reported a test-retest coefficient of .85 ($n = 126$) reported over a five-week period. Results in this

Table 1
Reliability Coefficients and Frequency of Items of the
School Effectiveness Questionnaire

<i>Components</i>	<i>Reliability Coefficient</i>	<i>Frequency of Items</i>
Principal leadership	.84	7
High expectations	.58	3
Positive, orderly climate	.91	9
Emphasis on basic skills	.76	4
Frequent, systematic evaluation of students	.75	3
Clearly stated goals	.77	4
Good home-school relations	.83	5

study were relatively widely distributed, allowing us to consider scores of 64 and above as high LPC leaders, while scores of 57 and below were considered low LPC leaders.

The Group Atmosphere Scale (GA), consisting of a 10-item semantic differential scale, was developed by Fiedler (1967) who reported a split-half reliability of .90. Schools with scores of 65 and below were considered to have poor leader-member relations while scores of 66 and above were considered to have good leader-member relations.

The Principal Position Power questionnaire, consisting of 12 items, developed by Hunt (1967) and modified by Bobner (1982) was used. The average interrater agreement among judges rating position power was .95 (Bobner, 1982). Scores of six and above were considered to indicate strong position power while scores of five or below were considered to indicate weak position power (Hunt, 1967).

The Task Structure Rating Scale used in the study was developed by Fiedler and Chemers (1974). The questionnaire consists of 10 items based on the components outlined previously. Responses can range from 0 to 20 with a score of 6 below being unstructured, a score of 7 to 13 being moderately structured, and a score of 14 or above being structured. We were unable to obtain reliability statistics for the scale, since it had seldomly been used in educational organizations.

Sample

The data were collected from schools in 33 of the 34 school districts in the province of Newfoundland and Labrador. Principals were asked to complete the least preferred co-worker scale, the group atmosphere scale, the task structure questionnaire, and the position power questionnaire. This procedure corresponds with the suggestion made by Fiedler and Chemers (1974). Teachers' data were collapsed into a school mean to determine a school effectiveness score.

The questionnaires were mailed to 281 schools, with 184 schools responding. Due to incomplete data, eight schools had to be discarded, leaving a sample of 176 schools and principals. School effectiveness instruments were returned by 899 teachers.

Table 2
Descriptive Statistics for Leadership Style (LPC), Group Atmosphere, Task Structure, Position Power, and School Effectiveness

Variable	Mean	Standard Deviation	Median	Mode	Range
Leadership style	60.90	18.54	62	62	16-125
Group atmosphere	65.49	8.28	66	70	37-80
Task structure	10.39	3.31	11	11	0-17
Position power	8.69	1.57	9	10	4-12
School effectiveness	163.78	22.41	166	175	64-210

The hypotheses were analyzed using the Spearman rank order correlation formula.

Because there were only four schools where the principal rated the position power as weak, and these were distributed over three octants, these scores were eliminated from the analysis. As a result of this classification there were no schools in octants II, IV, VI, and VIII. A total of 117 principals rated task structure as moderate and therefore could not be used in the analysis. The final allocation placed 26 schools in octant I, 5 schools in octant III, 6 schools in octant V and 18 schools in octant VII. Therefore, 31 schools rated as having high favorability, and 24 schools rated as having moderate favorability.

Hypotheses 1 and 2 represent essentially the main predictions of Fiedler's Contingency theory with respect to the school situation. Fiedler's theory states that low LPC principals will have higher group effectiveness than high LPC principals when there is high situational favorability, whereas high LPC principals will have higher group effectiveness than low LPC principals when the situational favorability is moderate. Neither of these hypotheses had a correlation that was statistically significant. From an inferential statistics perspective, no confidence can be placed in these two correlations. The correlation obtained for hypothesis 1 (.19, n 31) was directionally incongruent with that predicted by the Contingency Theory. The theory predicts negative correlations for octants I (good GA, high TS, and strong PP) and III (good GA, low TS, and strong PP). This result appears to confirm the suggestion made by Crehan (1984) that studies using the theory in schools have a low incidence of conformity. Because we consider our dependent variable, school effectiveness, to be reliably measured, one must question the use of Fiedler's theory in a modern educational context.

The correlation obtained for hypothesis 2 is .29 (n = 24), which is directionally congruent with the predictions of the theory. The theory predicts positive correlations of .42 and .05 for octants V (poor GA, high TS, and strong PP) and VII (poor GA, low TS, and strong PP). Our result is consistent in significance with other results reported in the literature involving school studies. McNamara (1968) reported a positive correlation of .31 for octant V, while Bobner (1982) found directional congruence for both octants V and VII. The magnitude of the correlations was not reported. It is difficult to place too much credibility on the findings of directionality. Research on effective schools

suggests that there may be variables operating at both the school level and the classroom level affecting the level of effectiveness (Crawford & Raia, 1988). Since the contingency theory posited by Fiedler is measuring variables at the school level, the instruments may be only partially obtaining the full affects of school and classroom practices.

Discussion

The results of this study challenge the main postulate of Fiedler's (1967) theory that group performance is contingent on the appropriate matching of leadership style and the degree of favorableness of the group situations for the leader. Given the moderate size of the sample, the rigor of the research methods, and strict adherence to the theoretical construct, it does not appear that the model is appropriate for today's school situations. Perhaps in the past there were school variables that related in some way to the model; however, the concept of school effectiveness appears to behave otherwise. In the following paragraphs an attempt is made to suggest some apparent discrepancies in the model and propose some required modifications to accommodate school effectiveness variables.

It is difficult to argue that a situational aspect is not relevant to school leadership. Current literature in program implementation, school culture, school effectiveness, and other variables all suggest that a situational component exists in school leadership.

Fiedler's major instrument for assessing leadership style, the Least Preferred Co-worker Scale (LPC) has been the subject of continued controversy since its development. Although the level and distribution of scores were appropriate, it is doubtful that the instrument is measuring leadership style. We believe that there are excellent leaders in effective schools who are both task-oriented and relation-oriented. It is doubtful that their style would relate to the situational variables proposed in the Fiedler model.

Although the major concern in this study was related to the LPC component, a number of issues regarding the situational variables should be addressed. According to the theory, Group Atmosphere has the most impact on situational favorability. The scores in this study were based on principals' reports and ranged from 31 to a perfect score of 80. This spread of results causes some concern. One must be skeptical when a principal rates his or her group atmosphere as the highest possible. An issue that has received some attention in the literature and that deserves a closer look is the possibility that the perception differs between leaders and members. Posthuma (1970) reported that there was no significant difference between leaders' and group members' perceptions of leader-member relations in experimental groups. In an early report, Fiedler (1967) found that the relationship between the leaders' and members' perceptions of group atmosphere was low. In the meta-analysis conducted by Strube and Garcia (1981), they reported that there was no regular pattern for assessing group atmosphere. On some occasions it was measured by the leader, while on other occasions it was measured by the members. Other leadership models (e.g., Likert, 1967) are very definite in this aspect and state that member relations should be assessed by subordinate perception.

Our criticism of the assessment of group atmosphere goes beyond the question of whose perception is presented. The major concern expressed in this study is that there is more than leader-member relations involved in group atmosphere on a school situation. It is our contention that this variable must be broadened to include other aspects, such as peer relationships, student impacts, and other cultural components. The group atmosphere variable has the potential to be one of the major situational variables. As it is currently defined and measured in Fiedler's model, it is not sophisticated enough for today's schools.

The structure of the task the group is required to perform is the second most important variable. Respondents are required to give their perceptions of leader influence over group performance, in the sense that a structured task enables the leader to impose organizational controls on the work process. As discussed earlier in the article, Fiedler has identified two kinds of task groups: those in which the task requires interdependent action by the group members, known as interacting groups, and those in which the group members work independently, known as coacting groups. According to Fiedler, the teaching process falls into the coacting group category. This study casts serious doubt on the applicability of this assumption in relation to the school situation. Current literature on school effectiveness (Mortimore et al., 1986) suggests that effective schools result when a highly motivated, highly integrated group of professionals work interdependently to accomplish organizational goals. If this is the case, there is no way that the school could be classified as made up of coacting groups. Crehan (1984) alludes to this discrepancy in her meta-analysis when she suggests that teaching may be both a structured and unstructured task depending on the nature not only of what is being taught, but also the pupil to whom it is being taught. Given this point of view, it is very difficult to designate the task of the school as structured or unstructured. The wide range of responses suggested that principals were somewhat uncertain how to classify the task. Principals may have perceived task structure based on the type of teaching approach used primarily in the school, their view of educational goals, or other perceptions. The wide range of results obtained suggests a variety of interpretations influenced the responses. More than 60% of the respondents placed their schools midway between structured and unstructured, a situation that Fiedler and Chemers (1974) called moderately structured. It is questionable whether a great deal of confidence can be placed in the credibility of this situational variable as it is currently defined and assessed.

The position power of the principal is viewed by Fiedler as the least important of the situational variables. This variable relates to the degree to which the position itself permits the principal to gain compliance from the staff. The majority of the principals in this study perceived their position power to be high; in fact only four principals rated their position power as low. In spite of the fact that this finding agrees with others in the literature (McKague, 1970; Mellor, 1974), one must question the designation when it is given by the principal. There is a possibility that others in the school or school system might not view the principal as having a lot of power. As a self-assessment, principals may want to give the impression that they occupy a seat of

power. Other views in the literature (Fullan, 1982) would suggest that much of the principal's power has been eroded due to collective bargaining and other sociological factors. In conclusion, although principal position power is only a minor variable in determining situational favorability, it is another instance where Fiedler's Contingency theory needs modification to fit today's school situations.

Conclusion

A meta-analysis conducted by Crehan (1984) found some support for the Contingency model in organizational settings other than schools. At that time she suggested that the applicability of the model to the school setting was tentative.

Results of this study tend to agree with Crehan's (1986) comments. It appeared that the school effectiveness dimension was a reliable variable to demonstrate the applicability of Fiedler's model to the school situation. A strong situational dimension appears to be implied in the current views of school effectiveness. As one of the major contingency approaches in the literature, it was felt that a test of the theory was warranted. However, the results suggest that major modification of the theory is necessary before it can be rigorously applied to the school situation.

Initially, there are major concerns with the concept of least preferred co-worker (LPC) as it applies to schools. Leaders in today's schools must be able to demonstrate both task and relationship behavior. Contingency models must reflect this finding. Refinement and modification of the situational variables must take place before the Fiedler model can be applied successfully to school situations. In this context, it is suggested that Group Atmosphere be measured by subordinates in educational settings.

The definition of task structure must be clarified. The majority of the respondents in this study depicted the task structure of schools as moderate. It is possible that the data in the middle reflect an organization containing both structured and unstructured tasks.

Similarly, clarification is required for the position power variable. Literature on the concept of empowerment in education would indicate that principals have relatively low position power. Perhaps this variable should also be rated by subordinate perception. Any attempts at matching schools with the leadership style of principals based on the use of the Fiedler theory must be considered futile. Major modifications are required before further research can be justified.

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Monitoring Student Teachers' Feelings of Preparedness to Teach, Personal Teaching Efficacy, and Teaching Efficacy in a New Secondary Teacher Education Program

Student teachers' feelings of preparedness to teach as measured on the PREP Scale (Housego, 1990b), personal teaching efficacy, and teaching efficacy as measured on the Gibson Scale of Teacher Efficacy (Gibson & Dembo, 1984) were monitored across the second offering of the revised UBC secondary teacher education program, 1988-1989, term by term, for the total group and subject specialization and gender subgroups. Total group and all subgroup PREP, personal teaching efficacy, and teaching efficacy mean scores increased significantly in first term. In second term total group mean PREP scores increased significantly but mean personal teaching efficacy and teaching efficacy scores did not. In third term neither mean PREP scores nor personal teaching efficacy nor teaching efficacy mean scores increased significantly. The findings for the four subject specialization subgroups were similar. All PREP Scale mean scores increased significantly in first term, two increased significantly in second term and none increased significantly in third term. Two subgroups recorded significant increases in personal teaching efficacy in first term; none were recorded beyond that point. No subject specialization subgroup recorded significant increases in teaching efficacy at any point; indeed, one subgroup recorded significant decreases during terms two and three. Both male and female PREP Scale mean scores increased in terms one and two but not three. Personal teaching efficacy mean scores increased significantly for both gender groups in first term, for females in second term (the practicum), and for neither group in third term. Neither subgroup recorded significant increases in teaching efficacy at any point. Implications for teacher education are discussed.

Les sentiments d'élèves-maîtres concernant leur état de préparation à l'enseignement mesurés par l'échelle PREP (Housego, 1990b), ceux concernant leur efficacité personnelle à l'enseignement, et l'efficacité à l'enseignement d'après eux, mesurés par l'échelle Teacher Efficacy de Gibson (Gibson & Dembo, 1984) étaient suivis pendant le second déroulement (1988-1989) du programme révisé de formation de maîtres du cycle secondaire de l'Université de la Colombie Britannique. Cela était fait pendant chaque trimestre pour tout le groupe et pour les sous-groupes d'élèves formés à partir des matières de spécialisation et du sexe. Les moyennes des scores de l'échelle PREP, de l'efficacité personnelle à l'enseignement, et de l'efficacité à l'enseignement augmentèrent d'une manière significative au premier trimestre. Pendant le second trimestre, les moyennes des scores de l'échelle PREP pour tout le groupe augmentèrent d'une manière significative, mais celles de l'efficacité personnelle à l'enseignement et l'efficacité à l'enseignement n'augmentèrent pas. Pendant le troisième trimestre, ni les moyennes des scores de l'échelle PREP, ni celles de l'efficacité personnelle à l'enseignement et l'efficacité à l'enseignement n'augmentèrent d'une manière significative. Les résultats pour les quatre sous-groupes de matières de spécialisation étaient semblables. Toutes les moyennes des scores de l'échelle PREP augmentèrent d'une manière significative au premier trimestre, deux moyennes augmentèrent au second trimestre, et aucune d'elles n'augmenta au troisième trimestre.

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Deux sous-groupes ont connu des augmentations significatives dans les moyennes de leurs scores d'efficacité personnelle à l'enseignement au cours du premier trimestre; aucune autre augmentation ne fut constatée au-delà du premier trimestre. Aucun sous-groupe de matières de spécialisation n'a connu des augmentations significatives dans l'efficacité à l'enseignement à aucun moment; d'ailleurs, pour un des sous-groupes on enregistra des diminutions significatives pendant les deuxième et troisième trimestres. Les moyennes des scores de l'échelle PREP pour les garçons aussi bien que pour les filles augmentèrent au cours du premier trimestre et du second, mais pas au troisième trimestre. Les moyennes des scores de l'efficacité personnelle à l'enseignement augmentèrent d'une manière significative aussi bien pour les garçons que pour les filles pendant le premier trimestre; pour les filles pendant le second trimestre (le stage d'enseignement pratique), et pour aucun groupe pendant le troisième trimestre. A aucun moment, pour l'un ni l'autre sous-groupe on n'enregistra une augmentation des scores d'efficacité à l'enseignement. Les implications de cette recherche pour la formation des enseignants sont présentées.

Self efficacy, an important personal characteristic or disposition, is described by Bandura (1986, p. 391) as the "judgment of one's capacity to accomplish a certain level of performance." It seems to imply a degree of preparedness by virtue of training, experience, or talent. It functions in a reciprocal relation to a specific behavior and the environment in which that behavior occurs (Bandura, 1978). Theoretically, change in a personal factor, for example, self efficacy regarding a teaching behavior such as gaining attention or explaining a particular concept, would affect the teaching behavior, which in turn would alter the educational environment. Each component plays a role in shaping the other two. Bandura (1977, p. 191) proposes that self efficacy "determines whether coping behavior will be initiated, how much effort will be expended and how long it will persist in the face of aversive experiences." He also distinguishes efficacy expectations from outcome expectations. Through the latter, one understands that a particular course of action will produce certain outcomes, whether or not one can perform those actions oneself. One is likely to act on an outcome expectation when one expects to be successful performing the behavior required to attain it, that is, one has the necessary efficacy expectation.

Two studies funded by the Rand Corporation (Armor et al., 1976; Berman, McLaughlin, Bass, Pauly, & Zellman, 1977) distinguished between outcome and efficacy expectations regarding teaching. They measured efficacy as the total score on two Likert-style items:

1. When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his or her home environment.
2. If I really try hard, I can get through to even the most difficult and unmotivated students.

These two items have been found to be not significantly correlated (Ashton, Olejnick, Crocker & McAuliffe, 1982; Poole & Okeafor, 1989; Tracz and Gibson, 1986; Woolfolk, Rossoff & Hoy, 1989). The distinction between the outcome expectation of the efficacy of teaching (Rand 1 efficacy) and the teacher's expectation of personal competence (Rand 2 efficacy) is therefore supported. Ashton and Webb (1986, p. 140), refer to outcome expectations as teaching efficacy (a "multi-dimensional situation specific construct" describing what it is possible to accomplish) and efficacy expectations as personal teaching efficacy (what the individual teacher, given his or her characteristics and the

current environment, feels he or she can accomplish or is prepared to accomplish). This article uses their terminology.

Researchers have established relationships between pupil achievement and both teaching efficacy and personal teaching efficacy. Beyond the Rand Corporation studies (Armor et al., 1976; Berman et al., 1977), in which teacher efficacy beliefs were shown to be related to pupil reading and mathematics achievement, Tracz & Gibson (1986, p. 3) reported positive correlations between personal teaching efficacy and pupil reading achievement and between teaching efficacy and pupil mathematics achievement. Also investigating the relationship between teacher efficacy and student learning responses, Midgeley, Feldlaufer, and Eccles (1988) found that pupils in transition from elementary to junior high school who moved from the classroom of a high efficacy teacher to the classroom of a low efficacy teacher demonstrated lower perceived performance expectations, lower perceived performance, and higher expectations of difficulty in mathematics than pupils who moved from one low efficacy teacher to another. Similarly, Anderson, Greene, and Loewen (1987) identified personal teaching efficacy at the beginning of the school term as a significant factor in the achievement of grade 3 pupils and in the development of self efficacy in both grade 3 and grade 6 pupils. Ashton and Webb (1986, p. 139) concluded that their findings "strongly support the hypothesis that teachers' sense of efficacy is related to student achievement."

Relationships have also been found between teaching efficacy or personal teaching efficacy and holding high expectations for pupils, maintaining on-task behavior, concentrating on academic instruction, and demonstrating "withitness" (Ashton, Webb, & Doda, 1983); using less small-group instruction (Gibson & Dembo, 1984; Tracz & Gibson, 1986); consulting parents and involving them in their children's education (Hoover-Dempsey, Bassler, & Brissie, 1987); relating to pupils in a more trusting and accepting manner (Ashton, 1984); and adopting a more humanitarian approach to pupil control (Woolfolk & Hoy, 1988; Woolfolk et al., 1989). Teachers with higher efficacy scores were rated more successful by superintendents (Trentham, Silvern, & Brogdon, 1985); found teaching less stressful (Parkay, Olejnik, & Proller, 1988; Greenwood, Olejnik, & Parkay, 1990); were less likely to leave the profession (Glickman & Tamashiro, 1982); and were less likely to label problem children and refer them to others for teaching (Meijer & Foster, 1988; Miller, 1988).

Since "high efficacy teachers tend to be teachers who exhibit the effective teaching behaviors found in the process-product research literature" (Parkay, et al., 1988, p. 2), it is to be expected that enhancing the development of teachers' sense of efficacy is becoming a common goal of staff development programs (Miller, 1988; Poole & Okeafor, 1989). It is a variable to which teacher educators should also attend (Ashton, 1984).

Few studies of the teaching efficacy and personal efficacy of student teachers have been done. Evans and Tribble (1986), studied perceived teaching problems, commitment to teaching, and self efficacy in elementary and secondary post-baccalaureate student teachers using the earlier 30-item version of the Gibson Teacher Efficacy Scale (Gibson & Dembo, 1984). They located gender and grade level effects. Female student teachers recorded higher efficacy scores than males, and elementary student teachers recorded higher

scores than secondary ones. Similar differences have been reported among practicing teachers (Cavers, 1988; Greenwood, Olejnik, & Parkay, 1990). Such findings raise questions about the development of feelings of preparedness for teaching, teaching efficacy, and personal teaching efficacy during the course of preservice teacher education.

The University of British Columbia teacher education programs were recently revised. Important modifications included a lecture type, generic teaching skills course with small group laboratories, a developmental practicum sequence culminating in a 13-week extended practicum, laboratory components in some other courses, and a communications course. The 12-month, three-term, post-degree secondary program begins with a term including the generic teaching skills course, a course analyzing educational issues, an educational psychology and adolescent development course, and subject specific methods courses. Second term includes the extended practicum preceded by a two-week communications course. The final term includes an educational psychology course, a foundations course, a school organization course, an English education course, and professional and academic electives. Program revision was planned by the faculty and subjected to the scrutiny of the wider university community, practicing teachers, and administrators and their professional organizations.

One might anticipate that appropriate program changes would enhance student teachers' feelings of preparedness to teach, their personal teaching efficacy (what teachers, given their individual characteristics and the current environment, feel they can accomplish or are prepared to accomplish), and their teaching efficacy (the expectation that it *is* possible to ensure learning gains through teaching), these being, perhaps, very basic indicators of the successful functioning of a program in which students should come to feel increasingly well prepared to teach and maintain high expectations regarding the goals to be attained through teaching.

This study monitors, for the total group and subgroups based on subject specialization and gender, student teachers' feelings of preparedness to teach, teaching efficacy and personal teaching efficacy from September 1988 to August 1989, the second offering of the revised secondary teacher education program at UBC. The PREP Scale (Housego, 1990b) was used to measure feelings of preparedness to teach and the Gibson Scale of Teacher Efficacy (Gibson & Dembo, 1984) to measure the other two variables. Both scales are described in the next section of the article. The following research questions were asked:

1. Did secondary student teachers' feelings of preparedness to teach increase significantly during each term of the program?
2. Did each secondary subject specialization and gender subgroup of secondary student teachers increase significantly in feeling prepared to teach in each term?
3. Did any subject specialization or gender subgroup of secondary student teachers feel significantly more prepared to teach than any other at the outset of the program or at the conclusion of any term?
4. Did teaching efficacy and personal teaching efficacy mean scores of secondary student teachers increase significantly in each term?

- 5. Did the teaching efficacy and personal teaching efficacy mean score of each subject specialization and gender subgroup of secondary student teachers increase significantly each term?
- 6. Did any subject specializaion or gender subgroup of secondary student teachers record a significantly higher mean teaching efficacy or personal teaching efficacy score at the outset of the program or at the conclusion of any term?

Method

Participants

Secondary student teachers, all of whom held degrees and enrolled to prepare themselves to teach one or two secondary school subjects, participated in this study. They were grouped in four subject specialization subgroups, paralleling those in a previous study (Housego, 1990a) as well as the departmental structure of the Faculty (see Table 1). Feelings of preparedness to teach, teaching efficacy, and personal teaching efficacy scores were obtained from the total group and subgroups at program entrance (baseline) and at the conclusion of each of the three terms. The actual and possible participation numbers and percentages for four data collections—September 1988; December 1988; May 1989; and August 1989—were as follows: 177 of 206 (86%), 129 of 202 (64%), 121 of 185 (65%), and 123 of 177 (69%). Table 1 displays the number of participants in each subject specialization and gender subgroup at each data collection point.

The Scales

The Student Teachers’ Feelings of Preparedness to Teach Scale (PREP Scale) was designed to measure the degree to which student teachers feel prepared to perform a set of tasks outlined by an 11-member interdepartmental Faculty committee as core in a teacher education program, applicable across grade levels and subject matter fields, and worthy of inclusion in the first basic course of a professional education program. The PREP Scale, which has under-

Table 1
Number of Participants by Subject Specialization and Gender:
Baseline (B) through Term Three

Subject Specialization	B	Term		
		1	2	3
Math, Science, Business. Ed. Home Ec. & Industrial Ed.	91	67	66	66
English, Social Studies, and other languages	56	32	29	34
Art, Music & Theatre	17	15	14	10
Physical Education	13	15	12	13
TOTAL	177	129	121	123
Gender				
Female	72	60	52	46
Male	105	69	69	77
TOTAL	177	129	121	123

gone one revision in order to align it with current student teaching evaluation forms, now includes 50 instead of the original 43 items, each stated so as to complete the sentence, "I feel prepared to ...". In revision, the five-point scale anchored on one end by "very well prepared" and on the other by "very poorly prepared" was replaced with a seven-point scale anchored on one end by "almost completely prepared" and on the other by "almost completely unprepared." In repeated administrations the revised PREP Scale, like the original, has been found to be very reliable (.95 based on Hoyt's coefficient, an index of item homogeneity) and valid for the purpose of this study (Housego, 1990a).

The Gibson Teacher Efficacy Scale (Gibson & Dembo, 1984) was also used. Nine six-point Likert-style items measure personal teaching efficacy, a teacher's belief that *he* or *she* has the skills and abilities necessary to bring about student learning and can in fact do so (Dembo & Gibson, 1985, pp. 174-175). The other seven items measure teaching efficacy, a somewhat more basic belief in the efficacy of teaching itself, the extent to which one believes that the effects of negative home and family background influences can be overcome through teaching, regardless of whether or not one is capable of doing it oneself.

Scoring and Analysis

Confidence interval data were obtained on the responses of the total group and subgroups of subjects on the PREP Scale and the Gibson Teacher Efficacy Scales four times during the program. In order to assess total or subgroup increases in feelings of preparedness, teaching efficacy, and personal teaching efficacy during each term, the significance of differences between successive mean scores was ascertained using a one-factor fixed effects analysis of variance design. The Newman-Keuls procedure was used to analyze post-hoc differences.

Report and Discussion of Findings

The findings of this study are presented in four subsections: (a) Total Group Mean PREP Scale Scores (b) Subject Specialization and Gender Subgroup Mean PREP Scale Scores (c) Total Group Mean Teaching Efficacy and Personal Teaching Efficacy Scores (d) Subject Specialization and Subgroup Mean Teaching Efficacy and Personal Teaching Efficacy Scores. Limitations of the study are discussed in a fifth subsection.

Total Group Mean PREP Scale Scores

The PREP Scale mean scores of the total group of secondary student teachers increased significantly ($F=210.12$, $df=3/546$, $\alpha=.05$) during the first and the second, but not the third term, as shown in Table 2.

Like other preservice teachers (Book, Byers, & Freeman, 1983; Housego, 1990a; Lanier & Little, 1986; Weinstein, 1988), secondary UBC student teachers believed they knew a good deal about teaching before they began professional training. At program entry, they scored, on the average, 4 or more points on the 7-point preparedness scale on 24 of 50 items, and 3.5 or more points on 42 of 50 items. Relatively high ratings of preparedness for activities with which individuals have limited familiarity are to be expected when they base their ratings on vicarious as opposed to enactive (real life) experiences (Bandura, 1986, p. 223). Many students enter the Faculty having had experience working

Table 2
Total Group Mean PREP Scale Scores: Baseline (B) through Term Three

	B	1	2	Term 3
PREP Scale Mean Score	200.27	270.57*	294.83*	293.92

*Significantly different from the previous term score at the $\alpha=.05$ level.

with children, and all, of course, were pupils and can readily see themselves in a teacher’s role (Lortie, 1975; Weinstein, 1988, p. 33).

The absence of a significant increase in the average rating of feeling prepared to teach in term three, the final four months of the 12-month program, invites speculation. Term three follows the extended practicum, a very positive experience for many students who are able to demonstrate their teaching skills and affirm their vocational choices. Some resent having to return to do further coursework when competence “on the job” has been proven, and there is so little time and energy to prepare for the commencement of a first teaching assignment in September. Third term coursework includes: school organization in its social context; an educational studies elective—social foundations of education, educational philosophy, history, sociology or anthropology; educational psychology (a further study of learning, measurement and teaching); an English education course; and two or three electives chosen to supplement the student’s subject matter specialization or professional interests. There may be an element of mismatch between this coursework, which is focused more on the context and content of teaching and less on teaching itself, and student concerns, which generally relate to what they perceive as pressing problems and more direct indicators of classroom success, such as pupil involvement (Harootunian & Yarger, 1981). Miklos and Greene (1987), studying Alberta teacher education programs, found foundations, educational administration, and educational psychology courses respectively the least, second least, and third least valued courses for teachers with two or three years experience. Kelly (1989) reported similar findings regarding teachers’ reactions to Saskatchewan teacher education programs. Overall the final and less practical term probably seems something of a letdown for students; moreover, it lacks a sense of closure since students must pursue additional coursework to earn a Bachelor of Education degree.

Subject Specialization and Gender Subgroup Mean PREP Scale Scores

As revealed in confidence interval data, and as shown in Table 3, no subject specialization subgroup of secondary student teachers felt more prepared to teach than any other at the baseline or at the end of any term of the program.

There were significant PREP Scale mean score increases ($F=42.33$, $df=15/554$, $\alpha=.05$) for every subject specialization subgroup in first term, as also shown in Table 3, and for two subgroups, including approximately 75% of the students, in second term. In third term, no subject specialization subgroup mean PREP Scale score increased significantly, a repetition of the total group finding.

Table 3
Subgroup Mean PREP Scale Scores by Subject Specialization and Gender:
Baseline (B) through Term Three

Subject Specialization	B	1	Term	
			2	3
Math, Sci., Bus. Ed. Home Ec. & Ind. Ed.	197.54	269.61*	288.70*	288.39
English, Soc. St. and other languages	200.18	265.19*	299.31*	297.49
Art, Music & Theatre	209.24	275.67*	307.43	301.30
Physical Education	208.28	281.20*	303.00	290.08
<i>Gender</i>				
Female	193.72	273.23*	300.35*	298.52
Male	204.76	268.25*	290.67*	291.17

*Significantly different from the previous term score for the same subgroup at the $\alpha=.05$ level.
+Significantly different at the $\alpha=.05$ level from a corresponding subgroup mean score recorded at the same time.

Similarly, as revealed in confidence interval data and indicated on Table 3, no gender subgroup mean PREP Scale score differed significantly from that of the other gender at the baseline or at the end of any term of the program.

Both gender subgroup mean PREP Scale scores increased significantly ($F=91.56, df=7/542, \alpha=.05$) in first and in second, although not in third, term.

Total Group Mean Teaching Efficacy and Personal Teaching Efficacy Scores

The Gibson Teacher Efficacy Scale provides additional access to student teachers' self-estimates of their "personal power and resources to affect pupils' classroom behavior in desirable ways" (Evans & Tribble, 1986). One component of the scale measures teaching efficacy, one's belief in teaching as a means of overcoming the effects of external factors which may impede student learning—home environment, family background, and parental influence. A second is the expectation that one is able to accomplish this oneself. The scale's author cautions that the two components should be considered separately in order to avoid "wash-out effects" (Personal communication, S. Gibson, January 24, 1990). Table 4 displays mean teaching efficacy and mean personal teaching efficacy scores at the baseline of the program and at the end of each term.

There are significant changes in the mean scores of both teaching efficacy ($F=6.49, df=3/546, \alpha=.05$), which declined by the end of first term, and per-

Table 4
Total Group Mean Teaching Efficacy and Personal Teaching Efficacy
Scores: Baseline (B) through Term Three

	B	1	Term	
			2	3
Teaching Efficacy	26.37	24.89*	23.90	24.29
Personal Teaching Efficacy	35.71	39.39*	40.50	40.20

*Significantly different at the $\alpha=.05$ level from the previous term score.

sonal teaching efficacy ($F=24.28, df=3/546, \alpha=.05$), which increased by the end of first term. Trend analysis of teaching efficacy scores revealed a declining trend. Interestingly, secondary student teachers indicated both a declining belief in teaching and an increasing confidence in their own abilities to teach within three months of program entry and before experiencing the extended practicum. Those who decry the effects of school experience on student teachers (Dewey, 1965; Lanier & Little, 1986; Zeichner & Tabachnick, 1981) would find no support in the finding that attitudes toward teaching appear to shift negatively in advance of school experience. Perhaps students quickly come to the realization that schools cannot do all they are expected to do.

Subject Specialization and Gender Subgroup Mean Teaching Efficacy and Personal Teaching Efficacy Scores

An overall test of subject specialization subgroup mean teaching efficacy scores and times (i.e., baseline, first, second, and third term) revealed no significant differences ($F=1.94, df=15/534, \alpha=.05$). Table 5 shows no subject specialization subgroup mean teaching efficacy score differed significantly from that of any other at the baseline or at the end of any term.

For only the first subgroup, largely science majors, mean teaching efficacy scores declined significantly from the baseline to the end of the second term practicum, a finding that is difficult to explain in that it is unlikely that the practicum or earlier experiences would be in any way qualitatively different for this subgroup than for others.

A similar overall test of gender subgroup mean teaching efficacy scores and times indicated significant differences ($F=4.05, df=7/543, \alpha=.05$). An examination of the confidence interval data showed no significant differences between the mean teaching efficacy scores of gender subgroups at the baseline or the end of any term of the program. The mean teaching efficacy scores of female student teachers did not change significantly from term to term ($F=2.54, df=3/226, \alpha=.05$). However, trend analysis revealed a significant *declining* linear trend ($F=4.63, df=3/316, \alpha=.05$) in the mean teaching efficacy scores of male student teachers. Were these elementary male student teachers,

Table 5
Subject Specialization and Gender Mean Teaching Efficacy Scores:
Baseline (B) through Term Three

Subgroup	B	Term		
		1	2	3
Math, Sci., Bus. Ed. Home Ec. & Ind. Ed.	26.56	25.19	24.00*	23.30*
English, Social Studies, and other languages	25.55	24.72	25.00	23.80
Art, Music, Theatre	26.77	25.00	23.93	26.00
Physical Education	28.00	23.80	24.33	24.23
<i>Gender</i>				
Female	26.92	25.80	24.14	25.50
Male	25.99	24.10	23.65	23.56

*Significantly different from the BASELINE score at the $\alpha=.05$ level.
+Significantly different at the $\alpha=.05$ level from a corresponding subgroup mean score recorded at the same time.

the finding might not have been surprising, since elementary teaching is still perceived as a more feminine than masculine occupation (Apple, 1987; Looker & McNutt, 1989; Rosenfeld & Stephan, 1978). Secondary teaching is, however, more gender neutral (Gottfredson, 1981), and is less likely to be viewed negatively (Brabeck & Weisgerber, 1989), hence finding a gender-based teaching efficacy difference is unexpected.

The personal teaching efficacy mean scores for subject specialization subgroups present a somewhat more positive picture. There were some significant increases ($F=6.86$, $df=15/534$, $\alpha=.05$) as shown in Table 6.

Confidence interval data show, as indicated in Table 6, that at the baseline of the program the mean personal teaching efficacy score of subgroup four significantly exceeded that of subgroups one and two at the $\alpha=.05$ level.

For the first two subgroups (75% of the students), mean personal teaching scores increased significantly during first term, although in not the second or third terms. Why personal teaching efficacy scores for these students did not increase during the extended practicum is puzzling. One would expect increases in personal teaching efficacy scores during an extended period of school experience, particularly if the experience is developmental and supervision is based on an adequate knowledge of effective teaching, focused on a manageable set of professional objectives and handled with sensitivity and genuine concern for the student (Housego & Boldt, 1985; Housego & Grimmet, 1983; Zimpher, 1987). The last two subgroups are small in contrast to the previously discussed ones and, although the changes in mean personal teaching efficacy scores are of similar magnitude, they fail to achieve significance.

The mean personal teaching efficacy scores for secondary gender subgroups are somewhat similar to the total group PREP Scale findings. There were significant ($F=11.47$, $df=7/542$, $\alpha=.05$) personal teaching efficacy increases for both gender subgroups in first term, but for only female student teachers in the second term practicum. Other researchers report gender differences in the efficacy scores of practicing teachers favoring females (Anderson et al., 1987; Greenwood et al., 1990), and Ellis, Mathews, and Cieslak (1986),

Table 6
Subject Specialization and Gender Subgroup Mean Personal Teaching Efficacy Scores: Baseline (B) through Term Three

Subgroup	Term			
	B	1	2	3
Math, Sci., Bus. Ed. Home Ec., Ind. Ed.	35.52	39.67*	39.13	39.52
English, Social Studies, and other languages	34.71	38.13*	41.69	41.21
Art, Music, Theatre	36.23	39.53	42.00	42.10
Physical Education	40.62+	40.67	43.42	39.62
Gender				
Female	35.07	38.90*	41.75*	40.46
Male	36.14	39.81*	39.57	40.05

*Significantly different from the previous term score for the subgroup at the $\alpha=.05$ level.
+Significantly different at the $\alpha=.05$ level from a corresponding subgroup mean score recorded at the same time.

report beginning male teachers have been found to have greater difficulty adapting to the teacher's role.

Limitations

This study focuses only on student teachers' perceptions of preparedness to teach and efficacy feelings, not on actual teaching performances or pupil achievement. A student teacher's feeling prepared to teach and his or her self estimates of ability to effect changes through teaching or belief that such changes are attainable does not ensure that he or she *is*, therefore, well prepared to teach. A number of beginning teachers will be interviewed and questioned regarding their actual preparedness to teach in a subsequent phase of the work.

In this study, few student teachers felt unprepared to teach at any point in the program. Few responses were below three on the seven point Likert-style PREP Scale. Lower levels of the PREP Scale seem to have limited application.

In addition, because of the lack of random sampling and the lack of control, there are limitations concerning the generalizability of the findings of this study to other subjects in other locations under similar conditions at other times.

Conclusions

The research questions were answered as follows:

1. Secondary student teachers' feelings of preparedness to teach increased significantly in the first and the second but not the third term of the program.
2. All subject specialization subgroups increased significantly in feelings of preparedness to teach in first term; two of four subgroups did so in second term, and no subgroup did so in third term. Both gender subgroups increased significantly in feeling prepared to teach in the first and the second but not in third term.
3. No subject specialization or gender subgroup felt significantly more prepared to teach than any other at the baseline or at the end of any term of the program.
4. For secondary student teachers in total, there was a declining trend in teaching efficacy scores. They decreased significantly in first term. Personal teaching efficacy scores, by contrast, increased significantly in the first term but not beyond it.
5. The teaching efficacy scores of the first subject specialization subgroup declined significantly from the baseline score by the end of second term. This was not so for any other subject specialization or gender subgroup although the mean scores of males assumed a declining trend.

The personal teaching efficacy mean scores of the first two subgroups increased significantly during first term only. No other subject specialization subgroup mean score increased significantly from one term to the next. Both male and female subgroups registered a significant increase in personal teaching efficacy in term one; only females continued growth in second term, and neither gender group showed growth in third term.

6. No subject specialization subgroup or gender subgroup mean teaching efficacy score differed significantly from that of any other at the outset of

the program or at the end of any term. At the baseline of the program, the mean personal teaching efficacy score of subject specialization subgroup four significantly exceeded that of subgroups one and two. There were no similar findings at the end of any term and no such findings regarding gender subgroup mean personal teaching efficacy scores.

Implications for Teacher Education

More than anything else, the findings of this study raise questions about the program's final term in which there were no significant increases in feelings of preparedness to teach or personal teaching efficacy for the total group or any subgroup, and teaching efficacy remained at a level significantly below that recorded when the program commenced. These findings are mirrored by the results of the author's investigation of the elementary teacher education program in which the content of the final term is similar (Housego, in press). Assuming the problem might be at least partially overcome through alterations to third term, what might be considered?

It has been suggested that the third term fails to capitalize on students' motivation to address the teaching and management problems they have experienced in the extended practicum. At that point, they are most able to identify their individual problems and, instead of addressing them, they move into the previously described largely theoretical term in which even the electives, having been chosen months earlier, may not meet current needs. As adult learners capable of framing their own objectives and pursuing what they value, student teachers are frustrated and unhappy about the expenditure of very limited time on course material in any way impractical or worse yet, repetitive. The educational psychology course could become a direct attempt to develop practical strategies for motivating students from varying backgrounds, to build a larger repertoire of management skills, and to develop and refine evaluation skills. Other courses could be scrutinized to see whether their content really meets the needs and expectations of soon-to-be-practicing teachers and whether there is enough commonality among course sections to assure students of comparable educational experiences and workloads. Perhaps some of the current third term content could be assigned as required to complete the Bachelor of Education degree and replaced with student-selected electives. It may be important to explore the relationships among the three terms and to assess the program as a whole, considering that problems that are manifested in third term may originate earlier in the program.

Also, it may be useful to reflect on the stage of development of student teachers after the practicum as a means of assessing their needs. Fuller and Bown (1975) proposed a sequence of student teachers' concerns on the basis of which four developmental stages were defined. In the first, a preteaching stage, students identify realistically with pupils but not teachers; in the second, their focus shifts to their own survival and the need to control the class and master content. The third-stage student teacher is concerned with actual teaching strategies while the fourth-stage student teacher is finally able to reflect on the needs of pupils and his or her own ability to relate to them as individuals. Whether the stages are distinct or overlapping (Burden, 1986, p. 192) is not clear. Assuming students who have completed the extended practicum to be probably at stage three and possibly at stage four and envisioning an appro-

priate final term of study, one would expect a preference for studying teaching strategies and learner characteristics rather than the so-called foundations of education.

Another set of implications grows out of the findings regarding the practicum, a term during which neither total group or subgroup teaching efficacy or personal teaching efficacy increased significantly, and during which female although not male student teachers' personal teaching efficacy scores increased. (Total group and gender subgroup PREP Scale scores did increase during the practicum). Some researchers (Katz, 1974) criticize the field experience component of teacher education programs as encouraging "excessive realism" among students, the tendency to model the classroom teacher's behavior instead of analyzing it as a basis for self-evaluation.

The quality of the educational experience of the practicum is uneven. Cooperating teachers are not all equally knowledgeable regarding effective teaching or to the same degree skilled in supervision. The same is true of university advisors. Nor are classrooms equally favorable as settings for the development of teaching strategies on the part of student teachers. Such problems are well known (Zeichner, 1990) and not easily solved; however, researchers continue to address these issues and make suggestions as to how field experience can be improved. Ideally, selection standards would be set for cooperating teachers and university advisors as opposed to placing students with volunteer teachers and providing few enticements for faculty to undertake supervision. Also, it would be helpful if there were opportunity to match student teachers and cooperating teachers and provide a workshop opportunity for some exploration of commonly held views. Certainly a mechanism for changing placements without prejudice is essential.

Further, although it is not so prevalent at the secondary as at the elementary level (Housego, in press), male student teachers seem to experience more difficulty than females. Women in this study increase significantly in personal teaching efficacy during the practicum. Males do not. Roberts and Nolen-Hoeksema (1989) report that, whereas women are influenced by positive and negative feedback and alter their self-evaluations accordingly, men take a more self-promotional stance and respond more to positive than negative feedback. Failure to process and act on negative feedback may help to explain male student teachers' limited increases in personal teaching efficacy. Certainly the practicum is an extended period of marginality (Clifton, 1979) and subservience, a time when it is difficult to be dominant, independent and oriented toward self-defined initiatives.

A final implication is derived from the declining teaching efficacy scores within the program. If one can attribute them to a confrontation with reality and a subsequent reduction of idealism, they can be understood. If they are viewed as a rapidly fading optimism concerning the credibility of teaching as a means of achieving desirable student learning goals, they are cause for concern, and methods of building a collegial spirit among students and between students and faculty in order to develop a more positive view of the profession should be sought.

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Principals' Encounters with Conflict: Tactics They and Others Use

Fifteen principals of elementary and secondary schools in a moderately large school system in Western Canada provided detailed descriptions of nonroutine conflicts they had encountered. Protagonists used a variety of tactics in dealing with the conflicts. The principals most often attempted to manage a conflict by improving the shared information base, by censuring dysfunctional behaviors, and by managing organizational climate. Others' actions, as reported by the principals, included criticism, sabotage, and threats. The findings provide support for parts of Thomas' fivefold typology of conflict management behaviors. They also suggest that school principals prefer an integrative approach to conflict resolution, rather than a distributive approach.

Quinze directeurs d'écoles élémentaires et secondaires d'un système scolaire de taille moyenne au Canada Occidental ont fourni des descriptions détaillées de conflits importants auxquels ils avaient fait face. Les protagonistes utilisèrent des tactiques variées pour résoudre ces conflits. Les directeurs, le plus souvent, tentèrent de les résoudre en améliorant l'information commune, en censurant les comportements dysfonctionnels, et en gérant le climat de l'organisation. Les actions des autres, selon les directeurs, étaient la critique, le sabotage, et les menaces. Les résultats supportent certains aspects de la typologie à cinq éléments de Thomas des comportements de gestion du conflit. Ils suggèrent en outre que les directeurs d'écoles préfèrent une approche d'intégration à la résolution du conflit, à une approche distributive.

The Importance of Conflict

Conflicts have long been seen as important challenges in human affairs, primarily because of their negative effects. For example, Brickman (1974) defines conflict as "behavior by one party that injures or damages the interests of another party," and Deutsch (1973, p. 10), one of the most often quoted authorities, similarly characterizes conflict as incompatible activities that interfere with the accomplishment of objectives, cause injury, and reduce effectiveness. In the literature on educational organizations this negative perspective is also evident, but it is tempered consistently by acknowledgments of the potential for salutary effects. Further, conflict management is often linked to organizational effectiveness (e.g., Green 1988; Leithwood, Cousins, & Smith, 1990; Owens, 1987; Sergiovanni, 1987; Wynn & Guditus, 1984).

However, conceptualizations about conflict and its management (e.g., Owens, 1987) often come from studies conducted in such noneducational settings as private sector collective bargaining and national and international politics, and it seems that little of the information has been verified as ap-

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plicable in school systems. Moreover, some of the findings from school studies are inconsistent with findings from noneducational settings. For example, Loewen (1983) found that the conflict management tactics used by school superintendents (chief executive officers) could not be categorized adequately when he relied on the typologies found in the literature: one of the nine types of conflict management tactics in the literature (appearing to lose) was not evident in his results; and four other types were not acknowledged in the literature: buying time, coalition destruction, environment control, and displaying naivety. Another inconsistency is evident in Boyd's (1989) study of how teachers deal with conflicts. The eight stages she identified in the development of conflicts do not match those found in the literature. Further inconsistencies emerge when Loewen's and Boyd's findings are compared with those of Abdennur. Whereas Abdennur (1987) found that social service volunteers tended to avoid conflict rather than confront or seek reconciliation, Loewen (1983) found that his school superintendents were quite aggressive when dealing with conflict, while Boyd (1989) found that teachers tend to seek reconciliation. Apparently typologies of coping behaviors may be occupation-specific.

It seems, then, that research is needed to validate (and extend) information about the management of conflicts in educational organizations. To this end, an investigation is underway to develop a substantial set of data (a projected 60 cases) concerning school principals' experiences with conflicts, and thereby to test the robustness of existing conceptualizations of conflict management. More specifically, the investigation is designed to (a) provide rich descriptions of important incidents in principals' experiences with conflict, (b) identify patterns in those experiences, and (c) relate the findings to existing theory.

At this time only the first 15 critical incident interviews with school principals that were conducted for Phase 1¹ of the four phase project have been subjected to an initial full analysis, but even these findings lend support to the proposition that the applicability in educational settings of extant information about conflict management needs to be tested. For example, one of the six questions that guide the investigation is "Who is involved and what causes conflict?" The related findings lend support to many of the propositions about conflict found in the literature (e.g., about complexity, likely protagonists, etc.) but also present some interesting anomalies (Fris, 1990); for example, that mainstream typologies (e.g., Corwin, 1969; French, Kast, & Rosenzweig, 1985; Sexton & Bowerman, 1979) have significant internal inconsistencies and may be unnecessarily complex. Indeed, at this stage it appears that a simple threefold typology of causes may account for most of the conflicts a school principal is likely to encounter:

1. Differences in values and goals: disagreements over what to do, the ends.
2. Incongruent role expectations: disagreements over how to proceed, the means. This class includes disagreements over how to organize a group of people for a collective enterprise, disagreements over the particular methods that various individuals will use to perform specific tasks, and disagreements over moral and ethical standards of behavior.
3. Disagreements over the distribution of limited resources: the rationing of the wherewithal. Included here are "shortages" in money, material and

equipment, time, space, status, influence (power and authority), and knowledge.

So far the data concerning types of conflicts indicate that the conflicts encountered by principals tend to center more on disagreements over how best to achieve certain objectives (type 2 above) and less on the distribution of scarce resources (type 3). Such findings, then, lend support to the notion that a critical analysis of information about conflict management is useful.

The purpose of this paper is to report findings that respond to the question "How do principals and others deal with conflicts?" and to relate those findings to pertinent research and theory. The findings are presented first from a *freeze-frame* perspective, then from a *time-lapse* perspective. Subsequently they are related to the models of conflict resolution behaviors advanced by Thomas (1976), Walton and McKersie (1965), and Axelrod (1984).

A Study of Principals

Participants

The first phase of the study was conducted in a Western Canada urban school system which comprised eight secondary schools (about 7,500 students) and 25 elementary schools (about 10,000 students). After the approval of senior administrators had been obtained, a description of the study was mailed to all principals in the system, and a purposive sample (principal's gender, elementary/secondary, size of school, socioeconomic status of community) was subsequently recruited by telephoning selected principals. The four women and 11 men who participated were the principals (and one vice-principal) of five larger (400-599 students) and four smaller (200-399 students) elementary schools, three larger (over 1,000 students) and three smaller (400-599 students) secondary schools. Their schools were located in both low and high socioeconomic communities. They provided interviews that lasted 60-90 minutes each.

Interviews

Each of the participants was asked to describe a school-related conflict that was "somewhat challenging" and not a routine problem. The interviews were recorded, with anonymity assured.

Data Analysis

The audiotapes of the interviews were transcribed to computer disks, a sample of the transcriptions was reviewed to check for accuracy, and each record was edited for readability. The length of the transcripts ranged from 11 to 25 single-spaced pages.

Each transcript was subjected to content analysis with the aid of a word processing program: in one window of the computer screen a transcript would be displayed and searched for references to pertinent phenomena—in this case any kind of action, maneuver, tactic, adjustment, and so on that seemed to be a move to deal with the conflict being described; such sections of the transcript would then be copied from the first window into another window, where they were grouped into categories of similar kinds of actions. This process, to use a film analogy, first distills the *plot* of an entire conflict incident into *snapshots* or *freeze-frames* of discrete actions, then creates *albums* (categories) of similar actions or developments. Because one of the principals had described two distinct conflict incidents, 16 such analyses resulted.

The full set of transcripts was also examined, to continue the analogy, for *recurring sequences of actions*: for recurring themes or *time-lapse sequences*. Each participant then received a copy of his or her interview transcript and the corresponding analysis for verification and further comment if desired. The full set of 16 analyses was then subjected to a further content analysis for cross-case consistencies.

Dealing with Conflicts: Freeze-Frame Perspectives

The interview transcripts contained 220 references to actions that were taken to deal with the conflicts; 146 of them described what the principals had done, 74 described what others had done.

Principals' Actions

The actions the principals took appear to fall into 11 categories. Only the first three are described in detail here because these types of actions were mentioned much more frequently than the others (Table 1).

Managing the Common Information Base

The principals most often attempted to deal with conflicts by working on the information that they *and others* used. This most often involved attempts to influence others' understandings. For example, a principal who described a conflict with members of a parents' committee (as well as teachers) over appropriate roles for parent volunteers took this action when, fairly late in the conflict, a trustee was about to become involved in the conflict:

I called up the trustee [who had been invited by the parents to their committee meeting] and I said, "You're being invited; go through the background."

Table 1
Conflict Management Strategies Used by the Principals

Major category Subcategory	Number of principals
1. Manage the information base (51 references)	
a. Influence others' understandings of the situation	8
b. Gather information	5
c. Verify information	4
d. Contradict	4
e. Impede the flow of information	4
f. Critique information	3
g. Try to change others' beliefs, actions	3
2. Censure unacceptable behavior (25 references)	
a. Set or reaffirm basic parameters	9
b. Put people in their places	3
c. Restrain, constrain	2
3. Manage climate (21 references)	
a. Provide moral support for others	8
b. Control the emotional pitch	3
c. Communicate particular values, model behavior	2
d. Emphasize importance of others' personal growth	2
e. Provide opportunity for saving face	1

Many of the other activities in this major category seemed to be directed at expanding the relevant information base, improving its quality, and disseminating its contents as widely as necessary. The following excerpts (with brief indication of the nature of the conflict) illustrate these dimensions:

Principal intercedes after two teachers get into a personal conflict. You know, you must communicate with your fellow principals if you have a problem. And some of the things I bounce off certain teachers who are on staff, who I can trust.

Two children, and families, in a running battle. I asked the teachers what [the boy] was doing. I spent many, many hours talking to the mother and to the father. I talked to many, many people to verify what I had heard.

Principal trying to curb photocopying by teachers. We informed the staff that photocopying was costing a lot of money. I kept tabs on it and I put this information in the bulletin that comes from the office every week.

Principal uncertain over best special placement for child. I talked to the mother in advance about the possibility of the special class placement. And the counselor took her over to look at the class and to meet the teacher. And she was invited to attend the meeting [for deciding special placements] if she would like to.

One sub-category in this category stands out as distinct from the other dimensions of information management, "impede the flow of information". Two examples of this kind of action appear in the following.

Principal and assistant superintendent disagree over appropriate role for the latter. I just quit telling the assistant superintendent about any problems. I told him nothing about the school. I handled this relationship by giving him no information. If he asked if anything was wrong in the school, I would talk about two or three things that were right. I encouraged him to use our meeting as an opportunity to share with me what he thought—and thus distracted him from his spying.

You can stop a conversation by standing up, using body language that makes the other person nervous, all of the tightening sorts of things that reduce the number of minutes of conversation.

A possible explanation is that this kind of action, even though it involves control of information, may in fact turn out to be part of the next category, censuring unacceptable behavior, with information control being a means rather than an end.

One phenomenon that has emerged with a fair degree of consistency (except in the above subcategory) is an apparent propensity to work problems out collaboratively, to involve the protagonists actively in the process of accommodating each competing interest as much, and *as equitably*, as possible. This common dynamic is illustrated in Table 2, a string of relevant excerpts from a case that involved a complex of discrete conflicts.

Censuring Unacceptable Behavior

The second most frequent category of responses to conflict had the general objective of reestablishing orderly, functional interpersonal relationships. For example:

Disagreement over appropriate role for assistant superintendent. I said, "[Only when] you begin to act in a confidential way can we discuss difficulties."

Table 2
Example of Collaborative Conflict Management

We had a new teacher, Mrs. Quick, a very fine master teacher. She had been a primary teacher and I put her in an intermediate classroom, a new experience for her.

Two parents, Mrs. Murphy and Mrs. Adams, became Mrs. Quick's parent volunteers. [Mrs. Murphy was President of the Parents' Committee and she and Mrs. Adams both had children in Mrs. Quick's class.]

Now, it got to the point where I could see that Mrs. Murphy wasn't helping out in the classroom: she was *teaching*. And two other people, the grade 3 teacher and the grade 4 teacher, had heard Mrs. Murphy teaching.

They didn't say anything to me but they talked with other staff members, who began to natter among themselves.

So I talked to Mrs. Quick and she said to me, "But she knows more [about computers] than I do; she can do what I'm getting her to do." So I said, "She is under your direction, yes?" And so I said, "We'll go with it." But the others weren't privy to that understanding.

Then, after I had been at a workshop for a couple of days, out of the school, when I came back in the school, Mrs. DeMuhn (who's in charge when I'm not here) said, "We've got a problem. While you were gone [teacher] Jones has been getting the staff together and really working them up. They don't like Murphy in the computer lab."

So then I went to Jones, and I got her to explain. And she was some upset: "She's ***! She's just ***! She's in here spying on us! She's walking in the halls. She's teaching that class; she's not in there as a parent!"

So we got everybody together as a staff because Jones, at that point, had them worked to a pitch.

And, you know, at this point teacher Quick was upset; she felt that nothing had been said directly to her but that they were all against her. I had given her support, she realized that but ... And both she and I realized there was only a couple more weeks left of the time the parent volunteers were going to come in and help us; we knew that we could just take that time and then it would be over.

But I had, you know, the situation with the staff. So we pulled them all together. I had two staff members lead it, the librarian and the person who is our teachers' association rep, brainstorm what their concerns were. And so they brainstormed ... they listed all their concerns.

People were on edge because this is not something people are used to doing. They weren't angry. They were, like, kind of ... They were kind of sitting back, like "I don't know whether I really want to be involved with this because this is going to get touchy and there's ... It may get hot, and I don't like this."

We went through all sorts of concerns that weren't related [to this issue] but, you know, they were just ... it was a way of breaking the ice. And finally they got down to the one I knew was crucial: that the principal wasn't being supportive.

I felt badly for teacher Quick because of course she's believing that she's caused all [the fuss]. She and I knew it was going to be over soon, and that I had been supportive of her. But she couldn't be seen to be a principal's pet, and she wanted to be accepted by the whole staff, because she was new to the school.

The solution they wanted was that Murphy be told she's got to be out of the computer class. And I said, "She's finished in only got a couple of sessions; we're going to ride that through."

Then they also wanted, because both Murphy and Adams were seen by the grade 3 teacher (and I think one other) as being in the halls too much, spying on them, that it be put in the newsletter that parents should report to the office before they come into the school, and that a sign be put up by the door: "Visitors please report to the office."

Those two suggestions I followed, even though I didn't agree with them. But I knew that you don't ask for suggestions and not follow them. So we let Murphy finish the last two helping sessions and that was the end of that [part of the troubles].

Grade 6 student a frequent truant, now also in trouble with the law. I said, "You're in grade 6, and I'm the boss."

[This student] would run—and he'd go! So what I used to do, if it looked like we were going to lose him, is take all his junk—his bag, his jacket, and all his personal belongings—and I'd take them and stash them somewhere where he couldn't find them. So when he ran, suddenly he didn't have all his worldly possessions with him [and he'd have to come back].

This kind of action, then, served to terminate behavior that prevented the principal from addressing the core issue.

Managing Climate

The third most common type of response seemed to focus on the improvement of others' emotional states. In the main, but not exclusively, this involved providing moral support:

Parent has complained to principal, apparently upset with teacher's treatment of daughter. I was very supportive of the teacher. I said, "If there is a problem, we will deal with the problem. I support you."

This kind of action, together with those in the other sub-categories seems to be directed at maximizing rationality and "empowering" others:

Controlling the emotional pitch. In preparation for the meeting with the parents we even generated and ran copies of a set of decision-making statements that we could pull out if we needed to—to help us remain very objective.

I acted quickly. I didn't want it to fester. I let them get through the affective stuff first. I decided that I was going to be nonjudgmental.

I tried mainly to be very calm and cool myself, to keep a fairly even tone and not be riled by him, and to take the line, "I am sorry you don't agree." I am always very careful to think about how the other person can take my particular reply. I also try to keep it in a very light vein without getting too serious.

Communicating particular values. The reason I was doing it was to try to show the staff by my example.

I was able to develop a few economies here in the office; not much but a little bit to show them that the office was doing its bit.

Emphasize importance of others' personal growth. My main strategy is to create an environment in which people feel that they want to grow, they need to grow, they are excited about growth, they see it as a challenge, they see it as something they have a responsibility for. And to ensure that they can't use the excuse, "I want to grow but there is never any money or time".

Provide others with opportunities to save face. I suggested that we get together at the first opportune moment that day. And we were able to get some time that day. As we went through this whole discussion, I think it became apparent to me—and I think to them—that how the grade 7 teacher interpreted what he overheard being said and how the vice principal meant it were two different things. For example, when the vice principal said to the grade 7 teacher, "This other teacher called you a scumbag, and apparently she doesn't think you are treating her very well," he had put his own interpretation on [a conversation he had overheard]. And so the grade 7 teacher explained, "No. She's a friend of mine and she was teasing. We

insult each other regularly.” So we went through some more of those kinds of things.
And then I was able to get them to focus a little bit on some of the strengths of each person—they did talk to each other about the things that they thought the other person did well. And it felt good.

Other Types

The other categories of actions for dealing with conflict that have emerged but remain to be confirmed as distinct types include using allies, protecting personal interests (“cover your butt”), focusing attention on the real problem, shifting responsibility for managing the conflict to whom it belongs, getting rid of the problem people, providing resources (time, specialist help), making concessions, and buying time.

Others’ Actions

The principals reported a wide range of actions used by others, actions that represent perhaps as many as 16 categories (Table 3). Clearly using allies, criticizing, and crystalizing the problem were used most often.

A sense of what a school principal may reasonably expect to experience at the hands of others is communicated by the following excerpts.

Table 3
Types of Actions Taken By Others

Major Category Subcategory	Number of principals
1. Use allies (14 references)	
a. Individual	5
b. Group	4
c. Arbitrator	2
2. Criticize (11 references)	8
3. Crystalize the problem (8 references)	
a. Bring the issue into the open	2
b. State view	3
c. Question, test information	2
4. Express anger (7 references)	4
5. Gather information, spy (6 references)	4
6. Pre-empt or sabotage others’ actions (5 references)	4
7. Threaten, intimidate (5 references)	4
8. Avoid/deny the problem (5 references)	3
9. Give up the fight (3 references)	2
10. Provide support (2 references)	2
11. Pester (2 references)	1
12. Protest, refuse (2 references)	1
13. Take control, remove control (1 reference)	1
14. Pin the blame on others (1 reference)	1
15. Refuse to be drawn into a conflict (1 reference)	1
16. Use misinformation, dissimulate, lie (1 reference)	1

Pre-empting the actions of others. Grade 6 student frequently a truant; now in trouble with law for breaking and entering, theft, etc.; but his diminutive stature garners lawyer's and judge's sympathy.

[The boy's assigned lawyer] said, "You're very angry and you shouldn't be in this business at all, dealing with children."

[The boy's assigned lawyer] didn't invite any of us to be witnesses, because "we were trying to get this kid put away." And she wouldn't talk to us; she was just being real snotty.

Threatening, intimidating: Union grievance over promotion of secretary. At the meeting before representatives of the board, there were two school trustees, a superintendent, ... a personnel manager, and me. And [on the other side] there were ... This was really ... I found this intriguing actually—there were the griever, the support person, the union rep, the president of the union, the negotiator for the [region], a support person, and another person who was learning the whole process. I mean, they just filled the other side of the table!

Avoiding or denying the problem: School has poor reputation, teachers resist principal's efforts to "turn the school (and them) around". When I stressed the importance of using teaching techniques that we know are effective, a typical reply from a teacher would be, "Yeah, but unless I feel good about it or unless the students feel good about me, unless there's lots of goodness, there will be no learning."

Refusing to be drawn into the conflict: Parents attempt to enlist help of trustee, to discredit the principal. The trustee listened and he said toward the end of it, "I have listened and I see that there have been meetings run that have not had consistent rules followed, that minutes have not been accurately kept. And it is completely understandable that a misunderstanding about the money took place. And I'm going to leave this meeting because I feel uncomfortable. You've made accusations against two of my employees, who are sitting here, and you now have to resolve that. I'm going to leave you to do that on your own."

Misinforming, lying: Parents attempt to discredit the principal. Then another letter went to the superintendent saying that the executive [of the parents' committee] had met and had decided ... Well, the executive hadn't met; only two of its members had met.

Dealing with Conflict: Time-Lapse Perspective

When the transcripts were examined for recurring sequences of discrete actions, one phenomenon occurred with sufficient frequency (12 of the 16 cases) to be noted here. This dynamic of conflict management involves a *shifting of gears*: typically a shift from a *softer* cooperative style to a *harder* forceful style. Table 4 provides an illustration of this dynamic.

Another aspect of this phenomenon is that in a few cases this dynamic included a reversion to the softer approach. Table 5 provides an example.

Discussion

The research reported here provides a basis for a critical examination of the information about conflict management that has been developed in arenas

Table 4
Example of a Shift from a Cooperative Style to a Forceful Style

When she came to me with her idea [for a show] I said, "Let's check it out with the staff." She checked her idea out with the parents' committee. [When one teacher came to me to object to the show] I just said, "Well I don't agree with you: and neither does the whole community." Because I had also done some research. I called a staff meeting and said, "Look, we do not want recently healed tensions between staff members re-awakened, and we don't want to put our kids through that again." So we called off the show. After we gave in to pressure and called off the show, a parent group came back to me and said, "We're not happy about this [decision to cancel the show]. We're going to take a petition and find out what the rest of the community, students, and the school committee thinks about it." About 99% wanted the show. After the parents' survey showed great support for going ahead with the show, I called a staff meeting and I said, "Well, these people want us to do it; and they're paying our wages; and they have some say in this. So we're going ahead." I told the objectors, "You don't have to help. And we will make a concession: we will not ***; we'll *** but we won't do what seems to be bothering you." We checked with a group in *** that was reported to have these *** shows all the time. We found that they did not have the problem we were experiencing. I decided I couldn't work under those conditions. So I covered myself by going to the superintendent and making sure he knew what was going on. And I said, "Look, you've got to transfer these people." I covered myself by getting the backing of my parents. I told the teachers concerned, "It would probably be best if you transferred." The transfers came around May, June.

other than education. Hence some of the main findings are related now to other research and theory.

Thomas' (1976) widely used model of conflict posits that the behavior of protagonists is a function of two competing forces: a need to satisfy personal goals (assertiveness) and a need to maintain good relationships with other persons (cooperativeness). The model identifies five archetypal conflict behaviors (Cooze, 1990, p. 23):

1. Forcing: high on assertiveness, low on accommodativeness.
2. Accommodating: high on accommodativeness, low on assertiveness.
3. Collaborating: high on both imperatives.
4. Avoiding: low on both imperatives.
5. Compromising: moderate on both imperatives.

In light of this model, the 16 cases analyzed in this investigation suggest three important things about principals' management of conflicts. First, the principals tended to treat the conflicts as problems to be solved collaboratively, the third approach in the Thomas matrix. This suggests a preference for the *win-win* approach to conflict management rather than the highly aggressive *win-lose* approach. In Walton and McKersie's (1965) terms, this is a preference for *integrative bargaining* as opposed to *distributive bargaining*. Integrative bargaining is possible when the objectives of the parties can be integrated to some degree: "Integrative potential exists when the nature of a problem permits solutions which benefit both parties, or at least when the gains of one party do not represent equal sacrifices by the other" (p. 5). This is closely related to what

Table 5
Example of a Cooperative-Forceful-Cooperative Shift

The parents' committee were all excited about the computer lab and they wanted software. They suggested that money from fundraising be used to get the software. And I said to them, "Well, I've just put an order in, to be paid from school funds. But would you like to use the fundraising money to pay for that?" And they said, "Oh, yes, yes, yes." So I made the change right after the meeting, in front of most of them.

Shortly thereafter, Brenda, President of the Parents' Committee, came in and said to my secretary, "I want the books, the books on fundraising." At that point we were managing all of the fundraising money. And the fundraising accounts were always open to them. But in this book we also kept records of my principal's account. So I said, "No, the book can't leave the school," and that if she wanted to take a look at it she could take a photocopy of the fundraising page or look at it here. And I said, "Would you like to look at it here?" "No, no, no. I want to take the accounts home."

I got a signal right there: her husband is a banker. And so I said to her, "Is there a problem, Brenda?" And she said, "You've spent [parents'] money. You spent money on software." And I said, "Yes, but that's what the committee decided." And I also said, "Now, perhaps this was a mistake. If you're not comfortable with that I can reverse that."

Now that was a mistake. I should have said, "Well, we should discuss that at the next meeting." But seeing her in distress, and knowing that she had a bee in her bonnet and was being guided by the background person, I thought, "Oh my god, here I go again. We're into another." And to me it was neither here nor there; we had school money to pay for it.

Well, she then went to a trustee, who was a first-year trustee and so was getting actively involved and listening to her. And then I got a copy of a letter she'd sent the superintendent, again accusing me of mismanagement of funds.

Well, because that was a very serious accusation, I went to the assistant chairperson of the Parents' Committee, Roberta, and alerted her: "I think we have a problem." And I outlined what had gone on and she said, "There's no way she can say that." She had been at the meeting.

Then Brenda decided that she would call an executive meeting without me present. But Roberta, when she got the call, called me and said, "This is what's going on and I'm not going to allow the meeting to go on." So she refused to go and got some of the other women to boycott it too.

But then another letter went to the superintendent saying, "The executive has met and has decided ..." even though the executive hadn't met: only two ladies had met. And they wanted a formal audit done of the books and they wanted to set up a separate account.

At that point I had begun to realize that the woman was not ... was being manipulative, was mentally ill ... was emotionally distressed. And the assistant superintendent's response was, "Call up her husband and have her husband talk to her." Well, I couldn't see that as a solution, I didn't see that as an alternative.

So I talked with Roberta. And she said, "At the next executive meeting we're going to address this."

In the meantime I heard that Brenda had invited the trustee to come to our next executive meeting. So I called him up and I said, "You're being invited; go through the background." And when we met before the meeting, he said, "What do you expect from this? And how can I help?" He realized that the woman was under much emotional distress, and he realized the game that was being played.

At the meeting Roberta, the Vice-President, just outlined what had happened: du, du, du, du! And at that point Brenda was almost shattered. Interestingly, the person who had been prompting Brenda behind the scenes did not show up at that meeting; she left Brenda to deal with all of the mess herself. The trustee listened and he said toward the end of it, "You know, I have listened and I see that there have been meetings run that have not had consistent rules followed, that have not had accurately kept minutes. And it is completely understandable that misunderstanding about the money took place. And I'm going to leave this meeting because you have made accusations against two of my employees, and *you* now have got to resolve that. I'm going to leave you to do that on your own."

Table 5 (continued)

Then we talked more about it. In fact I gave support to the President, because they were ready to ask for her resignation at this point and I don't know how she kept herself together. She was literally shattered. And I said, "Let's leave it a month until all has calmed down." We revised the constitution, we decided to always follow Roberts' Rules of Order, and that the meetings would always be taped. But although we had that worked out, I still had to get rid of Brenda as a parent volunteer [who was seen by the teachers as a spy and meddler]. So I asked for a meeting with her and said that I'd really appreciated the help that she had given to the school. And, you know, it started on a really positive note, with me specifically recalling some of the [good] work she had done. But I went on to tell her that I, and the staff, had some concerns about the number of parents that were in the school all the time and that I was going to have to ask her not to continue as a parent volunteer because there was some ... that staff were having some concerns about the number of parents that were in school and about her in particular. She began to cry, and cry, and cry, and took it as if she had done something terribly wrong. After that she made an appointment to see me, and I asked the assistant superintendent to be there. So she and her husband came in to see me. She was under great emotional distress and he handled the interview. And the husband said, "I think we've given a great deal to this school. I think ... we think the school may be closing. We think it might be a better idea if we transferred to another school." So he was suggesting to me he'd like to get his wife out of this setting. And we talked about that and agreed that would be a good idea. He knew that she was under distress. And he was trying to engineer a change, to let her have dignity. She was relieved to have him take over. I was relieved that they were going, transferring both children to another school. And we left it at that.

game theorists call the varying-sum game. Distributive bargaining, in contrast, occurs when the attainment of one party's goals is in basic conflict with those of the other party and one party's gain is a loss to the other (pp. 4-5), what game theorists refer to as a fixed-sum situation.

Second, the strategies used suggest that *attitudinal restructuring*, adapted from Walton and McKersie (1965), is a favored conflict management tool. Attitudinal restructuring activities are those that have the object of influencing relationships between parties, including competitiveness and cooperativeness. This objective seems to underlie the two types of actions that were reported most often in this study: managing the information base and managing climate.

Finally, the interview records point to the importance of being prepared to change a management style as the circumstances of a conflict change. Some of the scenarios suggested that an advance in conflict management is sometimes achieved by abandoning a collaborative or integrative approach and switching to *forcing* tactics. Forcing tactics were evident in *contradicting* (Type 1d actions in Table 1) and *censuring of unacceptable behavior* (Type 2 actions in Table 1). They were also evident in some of the other tentative classes of conflict management behaviors: using allies, safeguarding personal interests, shifting responsibility for a problem to whom it belongs, and attempting to get rid of problem people. This general pattern is consistent with Content's (1986) conclusion that suburban California principals most often use compromising and collaboration, followed by avoiding, accommodating, and forcing. A more important point, however, is that success in conflict resolution has been linked consistently (Axelrod, 1984) with the ability to shift from cooperation, to forcing, and back, the *tit-for-tat* strategy:

1. Start off *nice*. Never be the first to aggress.
2. *Retaliate* when your opponent aggresses.
3. Always be *forgiving*. If your opponent is nice or cooperates, forget the past and return the nice move.
4. Be very *clear and open about your strategy*: let others know that these are your principles.

The cases on which this report is based seem to support the contingency principle (Tosi & Carroll, 1976) that underscores the tit-for-tat approach.

These three general findings concerning principals' ways of dealing with conflict provide support for parts of the Thomas (1976) model of conflict management behaviors. However, it should be kept in mind that the findings may have been influenced by such factors as the participants electing to describe *safe* or *flattering* incidents. This might explain, among other things, the contrast between these somewhat gentle findings and Loewen's (1983) depiction of school superintendents (CEOs of school districts) as primarily assertive, if not aggressive, in the management of conflicts. Another consideration is that the way principals manage conflict reflects their philosophies of administration: which raises the kinds of philosophical issues that Hodgkinson (1983) discusses. For example, the tactic *get rid of problem people* clearly relates to the issues associated with the "excisionistic fallacy". But such matters are beyond the scope of this article.

Note

1. In Phase 2, "cultural context" was varied: 18 school principals in New Zealand were interviewed. In Phases 3 and 4, the cultural context will be changed again.

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